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THE NATIONAL AIR MONITORING PROGRAM

AIR QUALITY AND EMISSIONS TRENDS. VOLUME I

Environmental Protection Agency

August 1973

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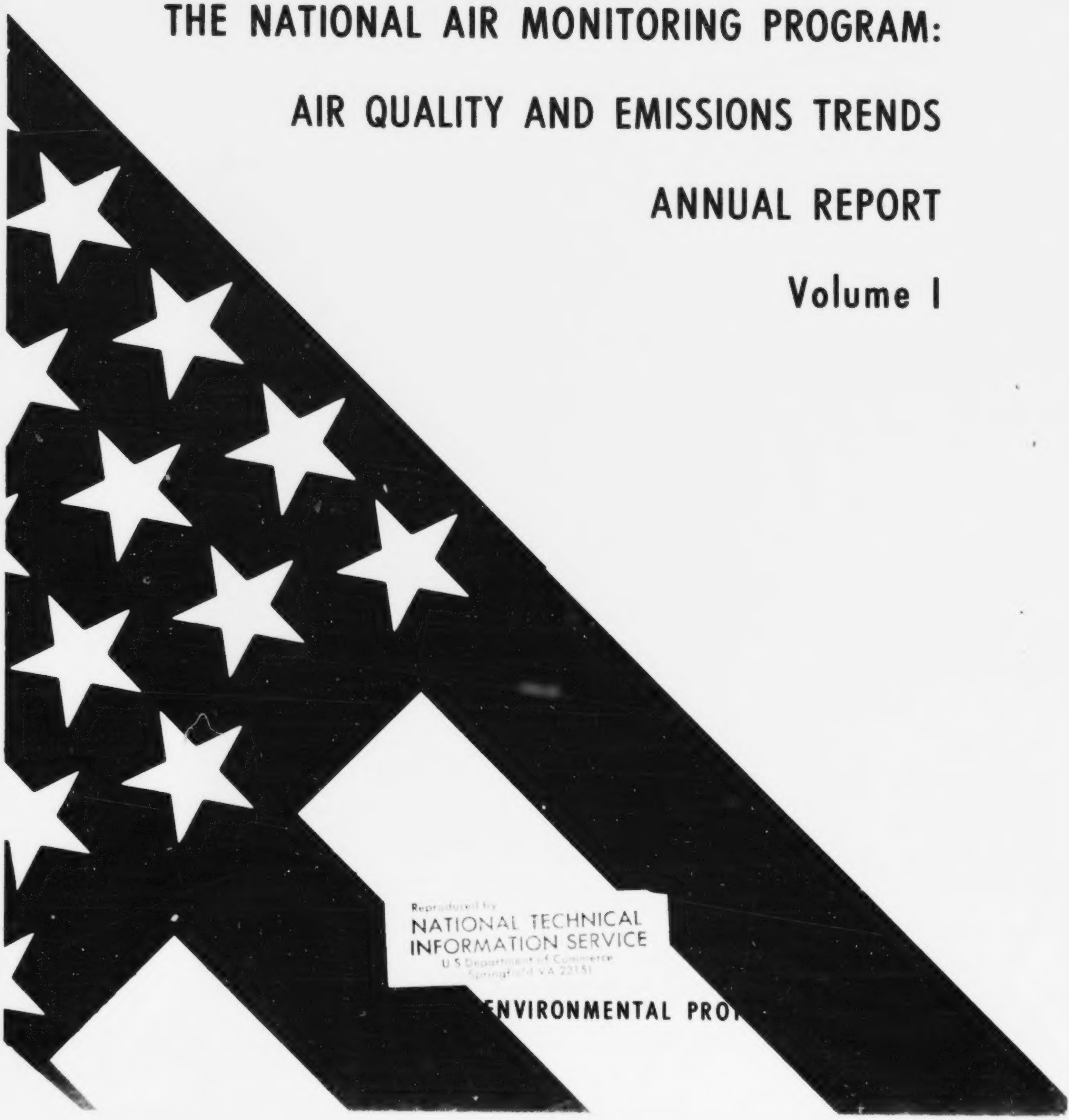
THE NATIONAL AIR MONITORING PROGRAM: AIR QUALITY AND EMISSIONS TRENDS

ANNUAL REPORT

Volume I



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Monitoring and Data Analysis Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air and Water Programs
Office of Air Quality Planning and Standards
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August 1973

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This report has been reviewed by the Monitoring and Data Analysis Division, Office of Air Quality Planning and Standards, Office of Air and Water Programs, Environmental Protection Agency, and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use. Copies are available free of charge to Federal employees, current contractors and grantees, and nonprofit organizations - as supplies permit - from the Air Pollution Technical Information Center, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, or copies may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20460.

FOREWORD

During final preparation of this report, several events occurred that affected its contents. Uncertainties have arisen concerning which reference method for nitrogen dioxide will be designated as the standard method (three candidate methods are proposed). Consequently, air quality data for nitrogen dioxide were deleted from this report, but are available in the Federal Register (38 FR 15174) of June 8, 1973.

In addition, notice was given in the Federal Register (38 FR 11355) of May 7, 1973 of a proposed revocation of the annual secondary air quality standard for sulfur dioxide. References to this standard were retained in this report because the proposed revocation should not affect the results or conclusions presented here.

Finally, notice of a proposed reclassification of Air Quality Control Regions for oxides of nitrogen was given by EPA's Acting Administrator in the Federal Register (38 FR 15174) of June 8, 1973. The Air Quality Control Region Priority Classifications for oxides of nitrogen that are contained in this report do not reflect any proposed changes.

ABSTRACT

This report represents the first major attempt in the history of the Federal air program to evaluate trends in air quality and emissions on both a national and a regional basis.

Based on data from the National Air Sampling Networks, air quality trends are presented for (1) total suspended particulates for 1960 through 1971, (2) carbon monoxide, oxides of nitrogen, and oxidants for 1962 through 1971, and (3) sulfur dioxide for 1964 through 1971. Included is a detailed evaluation of ambient air quality for three Air Quality Control Regions. For the period 1940 through 1970, emissions trends are presented on a national basis only.

Air quality data, emissions data, and summaries of monitoring activities are presented for each State and Air Quality Control Region. Specific program areas emphasized are data acquisition and analysis, and trend identification and interpretation.

Key Words

Air Quality Data
Air Quality Standards
Air Quality Trends
Carbon Monoxide
Data Analysis
Emissions Data
Emissions Trends
Hydrocarbons
Monitoring
Nitrogen Dioxide
Oxidants
Oxides of Nitrogen
Particulate Matter
Sulfur Dioxide

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LIST OF ABBREVIATIONS

AQCR	Air Quality Control Region
CAMP	Continuous Air Monitoring Program
CHESS	Community Health and Environmental Surveillance System
HC	Hydrocarbons
NAAQS	National Ambient Air Quality Standards
NADB	National Aerometric Data Bank
NASN	National Aerometric Surveillance Network
NEDB	National Emissions Data Bank
NEDS	National Emissions Data System
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of Nitrogen (NO and NO_2)
O_x	Total Oxidants
PM	Particulate Matter
SAROAD	Storage and Retrieval of Aerometric Data
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_x	Oxides of Sulfur (SO_2 and SO_3)
TSP	Total Suspended Particulates

THE NATIONAL AIR MONITORING PROGRAM: AIR QUALITY AND EMISSIONS TRENDS ANNUAL REPORT

1. SUMMARY

1.1 INTRODUCTION

The quality of our air and the manner in which this quality has changed is a subject of major public interest. Under the Clean Air Act, as amended (1970), the Environmental Protection Agency (EPA) is responsible for protecting and enhancing the Nation's air resources. This report, which is the first of a series to be issued periodically by the Office of Air and Water Programs, presents an overview of the status of air quality and emissions monitoring programs on a national scale. In addition to providing information to the public, this account should prove useful to Federal and State officials in their assessment of progress toward the achievement of national air quality goals. Specific program areas emphasized are data acquisition and analysis, and trend identification and interpretation.

This report is the first major attempt in the history of the Federal Air Program to present a comprehensive analysis and interpretation of data and information collected from Federal, State, and local air quality and emissions surveillance activities. Previous reports addressed themselves to specific monitoring operations (e.g., particular geographic regions or monitoring networks) with relatively limited statistical treatment.

The findings presented in this report are based on extensive monitoring activities conducted by Federal and other agencies and organized within 247 established Air Quality Control Regions (AQCR's). In addition, this report describes the status of pollutant emissions in the AQCR's and summarizes nationwide emission trends on a source-category basis. Information is furnished for the six pollutants for which National Ambient Air Quality Standards (NAAQS) have been set. These pollutants are suspended particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), photochemical oxidants (O_x), hydrocarbons (HC), and nitrogen dioxide (NO_2).

The Clean Air Act, as amended, requires that primary ambient air quality standards, designed to protect the public health, must be met nationally by 1975 unless a 2-year extension of this deadline is granted by the EPA Administrator. Secondary ambient air quality standards, designed to protect the public welfare, must be achieved within a reasonable time. Each State is required to submit to the Administrator a plan for the implementation, maintenance, and enforcement of the NAAQS within each

AQCR (or portion thereof) within the State. The major portions of the State Impementation Plans (SIP's) have been approved by EPA and are now being pursued. EPA is responsible for surveillance of the SIP's.

The data acquired by State air quality monitoring stations established under the SIP's are to be submitted to EPA on a quarterly basis. These data furnish the Agency the bases for both periodic air quality information evaluation and assessment of the rate at which SIP's are achieving their stated goals. Since this report includes information both on current air quality and on the status of SIP air monitoring networks, it should serve as a benchmark in reviewing the present status of major components of the air quality monitoring program.

This report, to the degree that it is comprehensive in terms of scope and content, is correspondingly sensitive to limitations imposed by the inadequacies of past surveillance activities. These inadequacies are the consequence of several contributory factors that include geographical, spatial, and temporal sampling maldistribution, inconsistencies in sampling and analytic methods, and the lack of systematic validation of acquired data. It is obvious that uncertainties associated with the developed data base must, of necessity, limit the degree of confidence that can be placed on interpretations derived from it. Nevertheless, it is believed that this report will serve a useful function in establishing a prototype that, through subsequent upgrading and refinement of the existing data base, will eventually evolve into a truly complete and reliable representation of air quality and emission trends and of progress toward the achievement of NAAQS.

1.2 NATIONAL AIR QUALITY AND EMISSIONS DATA

In interpreting the data contained in the report, it should be understood that State program requirements are to be progressively achieved over a period ending not later than 1977. This is to emphasize that the report portrays a particular cross section of an evolving process rather than a final result. This is true for both air quality and emissions data.

1.2.1 Air Quality Data

An important measure of progress in SIP realization is the relationship between the number of existing air quality monitoring stations and those required under the implementation planning process. Table 1-1 presents the numbers of existing monitoring stations for 1971 as well as those required and proposed, arranged by pollutant

Table 1-1. NATIONWIDE SUMMARY OF STATE MONITORING INVENTORIES AS COMPILED FROM STATE IMPLEMENTATION PLANS

Pollutant/method	Number of monitors			
	1971 existing	1974 proposed	Legal requirement	Percent increase, proposed/existing
TSP/tape	397	901	497	127
TSP/hi-vol	2538	3511	1372	38
SO_2/continuous	329	698	213	112
SO_2/West-Gaeke bubbler	541	1431	666	164
O_x/continuous	183	458	208	150
CO/NDIR continuous	197	457	133	132

method. As the table shows, the number of existing monitoring stations in a given pollutant-method category exceeds, in some instances, the 1974 legal requirement (Appendix B). Some table entries may be overly optimistic for two reasons. First, the numbers represent national totals that do not indicate geographic distribution by AQCR. For example, some AQCR's presently have more monitoring stations for some pollutants than is required in 1974. Other AQCR's must increase their monitoring activities to meet the legal requirement. Second, data obtained from some of the existing networks are frequently insufficient to enable reliable estimates of air quality or the evaluation of air quality trends.

The relationship between the total number of monitoring stations for a given pollutant and the number of those stations whose measurements exceeded established standards is presented in Table 1-2. This information is presented for 1969 through 1971. Note that this table reflects only those stations from the National Aerometric Data Bank (NADB) for which sufficient data were available to permit valid assessments of ambient air quality. It does not include all operating stations and therefore must not be construed as representing the total number of stations for which measurements may have exceeded air quality standards.

To ensure effective sequencing of State plan development, the Federal Regulations set forth a Priority Classification system according to which all AQCR's are grouped into three priority categories. These categories are based on the severity of pollutant concentrations either directly measured or estimated. A given AQCR is categorized by individual pollutant rather than on an overall basis. Thus, a Region may be classified as Priority I (most severe) for one pollutant and Priority III for another. This Priority Classification system was designed to guide the States in allocating resources for pollution control measures.

Table 1-3 presents a summary of the number of AQCR's with measurements in excess of NAAQS by pollutant priority classification. Based on data available in NADB, 12 AQCR's classified as TSP Priority I or IA met all standards for 1971, 7 met all standards for 1970, and 11 met all standards for 1969. More importantly, in 1971, 7 Priority III AQCR's exceeded the annual primary standard (2 others exceeded only the secondary standard), and 5 exceeded the primary 24-hour standard (10 others exceeded only the secondary standard). The fact that Priority I AQCR's have met or are meeting NAAQS is interesting but not too important since data limitations do not permit us to say that NAAQS are being met everywhere in the Region. The fact, however, that concentrations in excess of NAAQS are being measured in Priority III Regions is a matter of important interest since SIP requirements may have been less stringent for these Priority III Regions and, thus, promulgated control strategies might not necessarily be effective in achieving NAAQS.

In similar fashion, the AQCR's that are Priority I, II, or III for other pollutants are sorted according to their standing with respect to the standards for that pollutant.

1.2.2 Emissions Data

Emissions data, because of the shorter history of their collection, on a systematic basis, are less abundant than air quality data. Further, unlike air quality data, which are the results of direct measurements, emissions data are largely inferential (i.e., derived from emission factors or other indirect means).

Table 1-4 presents a summary of nationwide emission estimates. The top half shows the nationwide emission totals resulting from the summation of individual AQCR totals as found in the State Implementation Plans. AQCR totals were obtained by means of a comprehensive emission inventorying technique. This technique involves estimating a majority of the emissions on a point by point basis when such parameters as fuel rates, process rates, and types of control equipment and their efficiencies are known. In the case of area sources, for example, motor vehicle

Table 1-2. STANDARDS STATUS OF MONITORING STATIONS BY POLLUTANT, 1969-1971

	Number of stations		
	1969	1970	1971
Suspended particulates			
Total stations with year's valid data[a]	667	644	640
Exceeding annual secondary standard[b]	638	459	426
Exceeding annual primary standard	335	319	275
Total stations with 1 or more valid quarters	1095	1002	1313
Exceeding 24-hr secondary standard	594	530	628
Exceeding 24-hr primary standard	184	161	140
Sulfur dioxide			
Total stations with year's valid data[a]	178	155	153
Exceeding annual primary standard	24	19	4
Total stations with 1 or more quarter's valid data	234	276	409
Exceeding 24-hr secondary standard[b]	72	52	60
Exceeding 24-hr primary standard	54	34	47
Carbon monoxide			
Total stations with 1 or more quarter's valid data[a]	35	48	58
Exceeding 1-hr standard	3	10	7
Exceeding 8-hr standard	29	39	53
Total oxidants or ozone			
Total stations with 1 or more quarter's valid data[a]	38	45	50
Exceeding 1-hr standard	37	43	50

[a] Sufficient data available from which statistics can be calculated.

[b] These are considered to be air quality guides rather than standards.

emissions, vehicle miles of travel, average vehicle speeds, and population and age distribution of vehicle are all considered in determining the total emissions for that source category.

The SIP emissions data presented should be viewed with some caution. First, because a complete set of data for all pollutants is not available for several Regions, nationwide totals derived from these data will not be complete. Second, the emissions data for all Regions are not necessarily for the same year. Most of the existing data are referenced to the calendar year 1970. Third, it is not known whether all States used the same emission factors or estimating techniques in deriving their emission totals. For example, the ratio of CO from transportation to Regional population varies to a much higher degree than one would expect because of differences in traffic flow and vehicle miles of travel. Finally, these SIP emissions were calculated on the basis of the 1972 automotive testing procedure. Presently, emissions are calculated using the 1975 testing procedure. This change in testing procedure causes a corresponding change in nationwide emission rates not reflected in Table 1-4. For purposes of comparison, nationwide emissions for 1970 are shown based on the 1972 procedure. Tables presented subsequently in this report and in the Emission Trends section are the emissions based on the 1975 procedure and, thus, are the most up-to-date EPA estimates.

Table 1-3. AQCR STATUS WITH RESPECT TO STANDARDS, SUMMARIZED BY PRIORITY CLASSIFICATION

Status	Priority											
	I			II			III			Totals		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Suspended particulates												
Total AQCR's in each priority class	120	120	120	70	70	70	57	57	57	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	107	106	110	52	48	48	21	19	23	180	173	181
No. of AQCR's meeting all standards	11	7	12	17	20	18	14	12	8	42	39	38
No. of AQCR's exceeding any secondary standard or guide	96	99	98	35	28	30	7	7	15	138	134	143
No. of AQCR's exceeding any primary standard	86	88	75	15	14	17	4	4	8	105	106	100
No. of AQCR's exceeding secondary 24-hr standard	89	87	89	26	19	24	7	7	15	122	113	128
No. of AQCR's exceeding primary 24-hr standard	56	57	52	6	5	6	4	3	5	66	65	63
No. of AQCR's reporting sufficient annual data	96	96	86	41	36	31	12	11	18	149	143	135
No. of AQCR's exceeding secondary annual guide	81	89	73	28	23	22	4	5	9	113	117	104
No. of AQCR's exceeding primary annual standard	73	82	65	13	13	15	12	2	7	88	97	87
No. of AQCR's reporting only sufficient quarterly data	11	10	24	11	12	17	9	8	5	31	30	46
No. of AQCR's reporting insufficient data to compare to NAAQS	13	14	10	18	22	22	36	38	34	67	74	66
Sulfur dioxide												
Total AQCR's in each priority class	60	60	60	41	41	41	146	146	146	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	37	42	42	19	22	24	33	48	53	89	88	119
No. of AQCR's meeting all standards	23	31	26	14	16	15	32	47	51	69	94	92
No. of AQCR's exceeding any secondary standard or guide	14	11	16	5	6	9	1	1	2	20	18	27
No. of AQCR's exceeding any primary standard	12	10	15	4	5	9	1	1	2	17	16	26
No. of AQCR's exceeding secondary 24-hr standard	13	11	16	5	5	9	1	1	2	19	17	27
No. of AQCR's exceeding primary 24-hr standard	11	9	15	3	3	9	1	1	2	15	13	26
No. of AQCR's exceeding secondary 3-hr standard	6	5	6	1	0	1	0	0	0	7	5	7

Table 1-3 (continued). AQCR STATUS WITH RESPECT TO STANDARDS, SUMMARIZED BY PRIORITY CLASSIFICATION

Status	Priority											
	I			II			III			Totals		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Sulfur dioxide (continued)												
No. of AQCR's reporting sufficient annual data	30	32	28	18	16	17	27	22	20	75	70	65
No. of AQCR's exceeding secondary annual guide	10	7	7	2	3	3	0	0	0	12	10	10
No. of AQCR's exceeding primary annual standard	6	5	3	1	2	0	0	0	0	7	7	3
No. of AQCR's reporting only sufficient quarterly data	7	10	14	1	6	7	6	26	33	14	42	54
No. of AQCR's reporting insufficient data to compare to NAAQS	23	18	18	22	19	17	113	98	93	158	135	128
Carbon monoxide												
Total AQCR's in each priority class	29	29	29				218	218	218	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	11	11	13				5	3	8	16	14	21
No. of AQCR's exceeding any primary standard	11	11	13				3	3	8	14	14	21
Oxidants												
Total AQCR's in each priority class	54	54	54				193	193	193	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	9	13	15				0	0	0	9	13	15
No. of AQCR's exceeding the primary standard	9	12	15				0	0	0	9	12	15

Table 1-4. COMPARISON OF SIP EMISSIONS AND 1970 NATIONWIDE ESTIMATES (10^6 tons/yr)

Source category	SO_x	PM	CO	HC	NO_x
SIP emissions[a]					
Transportation	0.8	1.1	100.9	18.0	11.6
Fuel combustion in stationary sources	28.9	9.9	1.5	1.0	9.2
Industrial processes	7.8	10.3	10.3	4.3	0.6
Solid waste disposal	0.1	1.1	3.4	1.2	0.3
Miscellaneous	0.2	1.1	2.3	1.5	0.2
Total	37.8	23.5	118.4	26.0	21.9
1970 nationwide estimates[b,c]					
Transportation	1.0	0.8	111.0	19.5	11.7
Fuel combustion in stationary sources	26.4	6.7	0.8	0.6	10.0
Industrial processes	6.4	13.3	11.4	5.5	0.2
Solid waste disposal	0.1	1.4	7.2	2.0	0.4
Miscellaneous	0.2	4.0	18.3	7.3	0.5
Total	34.1	26.2	149.0	34.9	22.8

[a] Source: State Implementation Plans.

[b] Source: OAP Reference Book of Nationwide Emissions, 1970. Internal Document, ATD, NSIS, Durham, N.C.

[c] Not adjusted for 1975 motor vehicle testing procedure or changes in estimating procedures as discussed in Trends section.

The bottom half of Table 1-4 presents 1970 nationwide emissions. These numbers were derived from nationwide totals of fuel consumption, process weights, and overall average industry control efficiencies. For motor vehicles, nationwide averages of vehicle population and age distribution, average route speeds, and emission factors were used to derive nationwide totals. Comparisons made between the results of these two techniques should be viewed with these differences of procedure in mind.

1.3 AIR QUALITY AND EMISSIONS TRENDS

Air quality data, reflecting successive measurements of the same pollutants over extended periods, indicate the way in which that particular concentration parameter varies with time. These variations are usually quite complex because of the variety of factors other than emission rates that effect them. Such factors include meteorology, topography, and source location. Through appropriate analytical techniques, meaningful trends can be identified and described. Such air quality trends are essential to the evaluation of the rate at which SIP control measures are effective in achieving NAAQS.

EPA, on the basis of experience, has determined that the difficulties in generating valid trend analyses at this time are due less to the inherent complexity of the problem than they are to the incompleteness and uncertainties that pervade the available data base. As SIP monitoring activities become fully operational, however, the quality of the data base should progressively improve. It is expected that this improvement will be reflected in a higher level of reliability of trend analysis than is possible at this time.

In addition to air quality trends, a summary of nationwide emissions trends by source category is presented. Such trend information on an AQCR basis is not available at this time.

1.3.1 Air Quality Trends

The air quality trends discussed in this report are based primarily on data collected by two Federal air monitoring systems: the National Air Surveillance Networks (NASN) and the Continuous Air Monitoring Program (CAMP). NASN data reflect samples taken on a systematic random schedule for a 24-hour collection period once every 2 weeks. CAMP data are acquired on a continuous basis over 5-minute sampling intervals. Future reports will more fully utilize State and local air quality data submitted under SIP reporting requirements.

For both of these networks, the sampling sites have been predominantly urban, with one station in a city. In general, efforts were made to locate these sites in a manner such that they would be roughly comparable from city to city. But, in the case of any given city, it should not be assumed that the selected site was representative of the urban area as a whole. Therefore, trend interpretations must be tempered by an understanding of the limitations of the data collection pattern.

State and local air quality data were not utilized in the determination of national trends because, in part, of the uneven geographical distribution of sampling networks (that reported to NADB) throughout the country. In addition, a sufficient time history of data was unavailable at most of these State and local sites to permit a long-term trend evaluation. It was judged that any trends derived from inclusion of State and local data would have distorted the national analysis. Many of these deficiencies, however, as mentioned previously, will be eliminated as air quality data collection mechanisms become fully operational as required by the SIP's.

1.3.1.1 National trends in TSP and SO_2 - Urban, nonurban, and geographic national trends, based on data obtained from the NASN network, are presented for total suspended particulates (TSP) and for sulfur dioxide (SO_2). The trend evaluation was based on comparisons of averages of pollutant concentrations between successive time intervals from 1960 through 1971. Depending on whether long-term or more recent trends were to be evaluated, different intervals were used.

The results of these analyses show that both TSP and SO_2 air quality have improved considerably over the past 12 years at most of the center-city NASN stations. Summaries of these improvements, in the form of composite station annual averages, are presented in Figure 1-1 for TSP and in Figure 1-2 for SO_2. For TSP, the urban composite average decreased from approximately 110 $\mu g/m^3$ in 1960 to 85 $\mu g/m^3$ in 1971, an overall decrease of approximately 20 percent. For SO_2, the urban composite average dropped from 55 $\mu g/m^3$ in 1964 to approximately 25/$\mu g/m^3$ in 1971.

Figures 1-3 and 1-4 present similar trends in urban areas for the maximum values of daily TSP and SO_2 concentrations.

For the purpose of detecting geographical differences in air quality trends, the country was divided into four regions. Comparisons in trends between these geographical regions are shown in Figure 1-5 for TSP and in Figure 1-6 for SO_2. Overall, TSP and SO_2 pollutant concentrations tend to be higher in the Northeast and North Central portions of the United States. In general, all regions show downward trends for each pollutant. Furthermore, SO_2 concentration improvements were substantially greater in the Northeast and North Central regions where pollutant levels were initially higher; the most dramatic improvements have occurred since 1967.

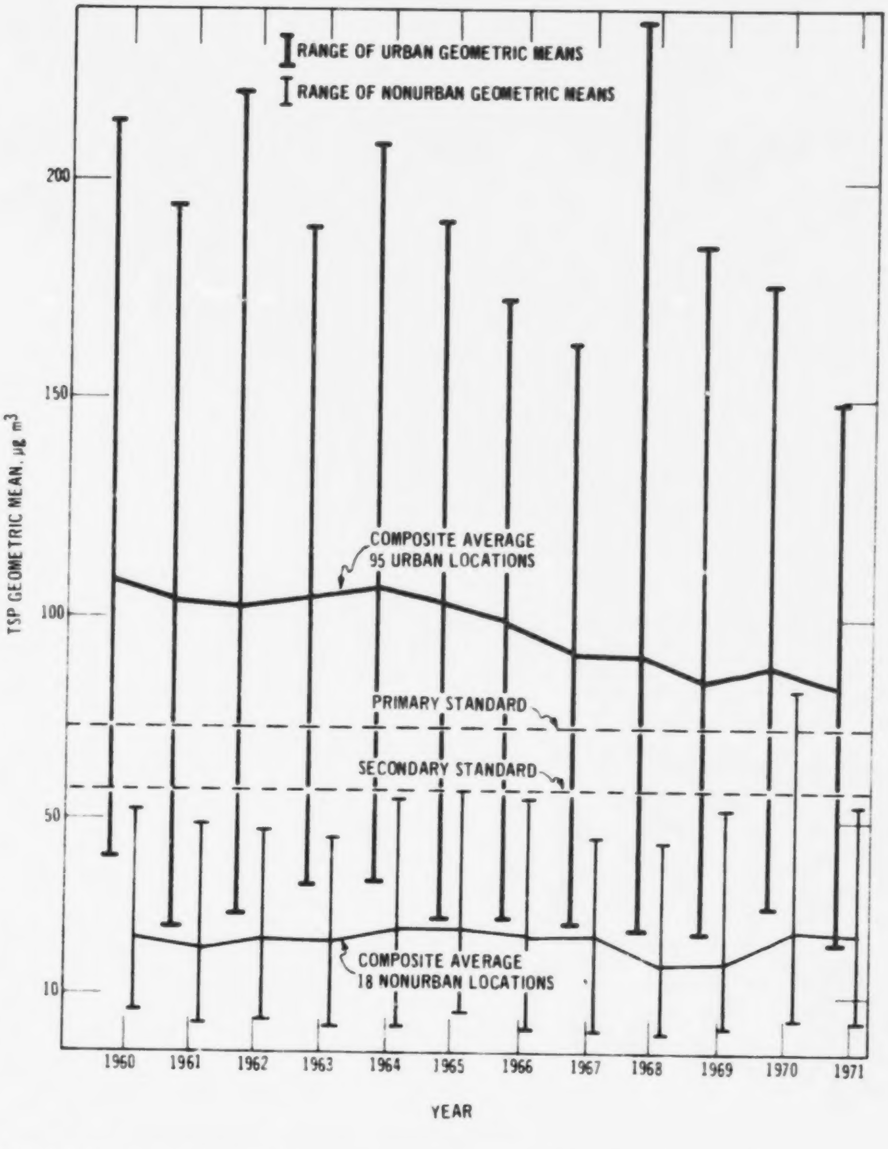

Figure 1-1. Composite annual means of total suspended particulate at urban and nonurban NASN stations.

1.3.1.2 Air quality trends at CAMP stations - Trends in ambient air quality levels were examined in five of the six CAMP cities for 1962 through 1971. The results of the analysis suggest a slight decline in CO concentrations but a long-term gradual rise in oxides of nitrogen. Sufficient data were not available to permit a complete evaluation of oxidants or hydrocarbons.

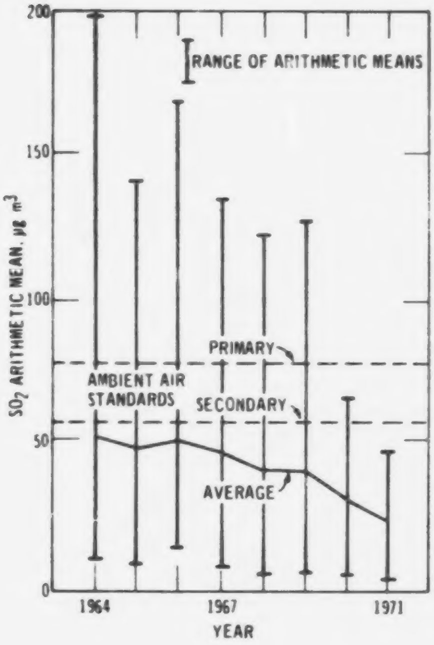

Figure 1-2. Composite annual means of sulfur dioxide at 32 NASN stations.

1.3.2 Emissions Trends

Emissions trends discussed in this report are based on data for five major air pollutants (SO_2, PM, CO, HC, and NO_x) over the period 1940 to 1970.* Levels of emissions were estimated using various indicators such as national totals of fuel consumption, refuse burning rates, vehicle miles of travel, industrial production rates, and control efficiencies. Average emission factors, which relate these indicators to emission rates for specific source categories, were used in deriving the estimates. It is believed that these estimates provide fairly reliable representations of nationwide emission totals.

Yearly fluctuations in emission levels for some source categories are difficult to detect. For example, changes in the sulfur content of fuels can vary significantly from one year to the next. In the absence of continual and systematic updating of information, only estimates of such changes can be made. Over a longer time frame of 5 to 20 years, however, not only are mere fluctuations easier to detect, but their impact is more readily apparent than on a year to year basis.

Estimated nationwide totals of emission levels over a 30-year time span are presented in Table 1-5. The yearly emission rate is categorized according to controllable and miscellaneous (uncontrollable) emissions. These miscellaneous sources include

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*A much more detailed discussion, including tables and methodology, is presented in Nationwide Air Pollutant Emission Trends, 1940-1970, AP-115.

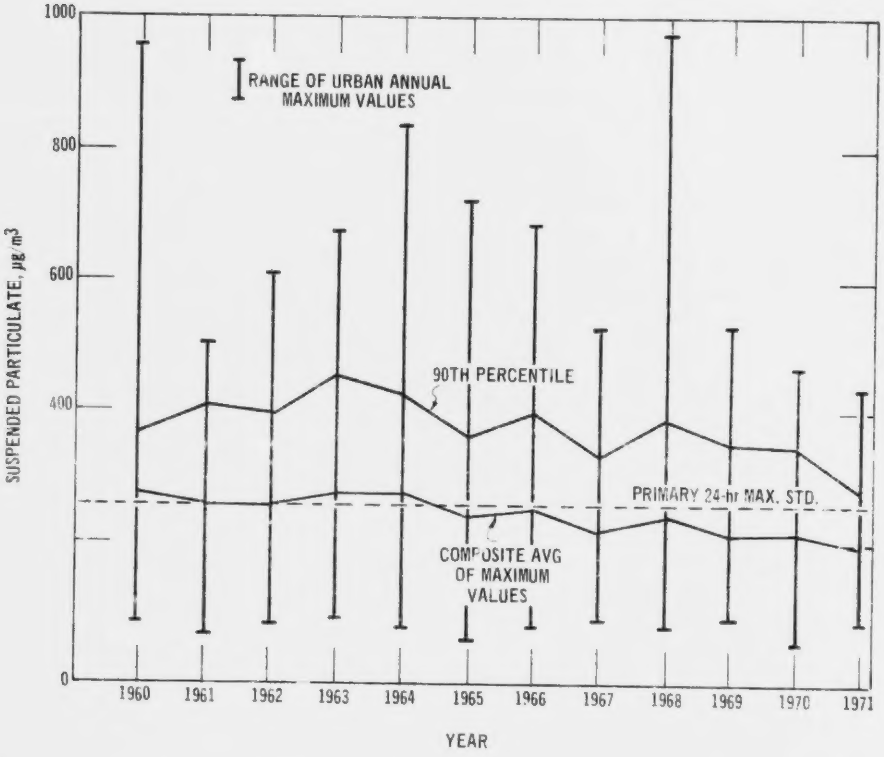

Figure 1-3. Composite average and 90th percentiles of annual maximum daily suspended particulate matter concentrations at 95 urban NASN stations.

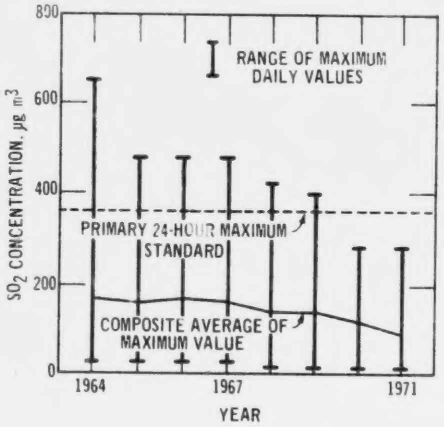

Figure 1-4. Composite average of annual maximum daily sulfur dioxide concentrations at 32 urban NASN stations.

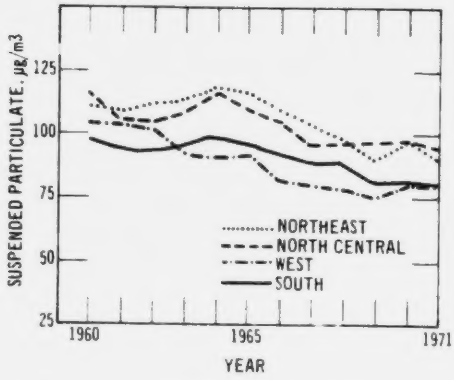

Figure 1-5. Regional comparisons of composite annual mean suspended particulate matter concentrations at urban NASN stations.

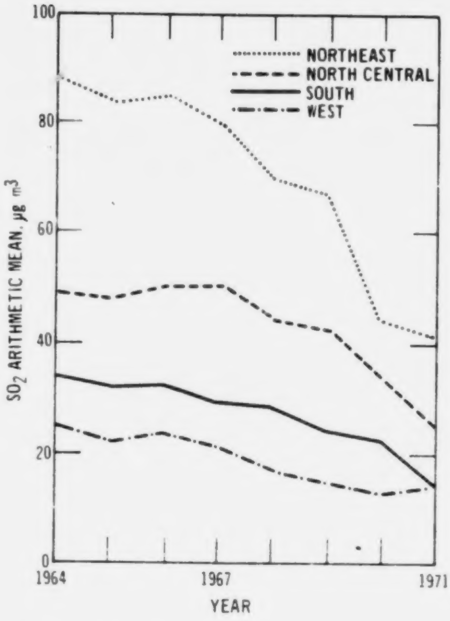

Figure 1-6. Regional comparisons of composite annual arithmetic mean sulfur dioxide concentrations at urban NASN stations.

forest fires, structural fires, and other pollutant origins over which man has no real effective control. It is important to note that not all natural sources of pollution are included because of the lack of information on totals or emission factors.

These estimates reflect the latest EPA data on emission factors and source activity rates as well as the use of the 1975 testing procedure of estimating motor vehicle emissions. The 1975 testing procedure is thought to be more representative of actual driving conditions than the old 1972 procedure.

Over the 30-year interval, total CO emissions increased at a compound rate of 1.1 percent per year. Carbon monoxide emissions from automotive sources, however, have increased at an annual rate of nearly 4.0 percent. The difference in growth rates between automotive CO and total CO is accounted for by a greater reduction in emissions from stationary fuel combustion and miscellaneous sources than from automotive sources.

Hydrocarbon emissions increased about 1.7 percent annually from 1940 to 1970. Automotive sources alone represent a rate increase for HC emissions of nearly 3.3 percent. The control of hydrocarbons from the crankcase (or blowby) reduced average per-vehicle emissions by one-third in the early 1960's. This has resulted in an HC emission growth rate from vehicles that is lower than the CO growth rate.

For the period 1940 to 1970, the growth rates of NO_x emissions from motor vehicles and stationary fuel combustion sources were very similar, being 4.8 percent and 3.7 percent, respectively. Over the period 1940 to 1960, however, the average rate of increase for NO_x emissions from road vehicles was 4.9 percent, whereas the increase from stationary fuel combustion sources was only 2.0 percent. During the period 1960 to 1970, these trends were reversed and the road vehicle rate of increase was 4.6 percent as opposed to 7.3 percent for stationary fuel combustion sources.

Table 1-5. ESTIMATED TOTAL NATIONWIDE EMISSION LEVELS, 1940-1970 (10^6 tons/yr)

	SO_2	PM	CO	HC	NO_x
1940 Controllable	22.2	19.2	42.5	10.1	5.5
Misc. (uncontrollable)[a]	0.6	25.7	30.5	6.5	1.0
Total	22.8	44.9	72.5	16.6	6.5
1950 Controllable	24.3	20.8	62.3	15.6	8.2
Misc. (uncontrollable)	0.6	12.4	20.6	6.2	0.6
Total	24.9	33.2	82.9	21.8	8.8
1960 Controllable	22.6	21.0	79.3	18.8	10.9
Misc. (uncontrollable)	0.6	8.9	19.3	7.0	0.5
Total	23.2	29.9	98.6	25.8	11.4
1968 Controllable	30.5	22.5	93.4	22.1	19.1
Misc. (uncontrollable)	0.6	5.9	18.0	7.6	0.4
Total	31.1	28.4	111.4	29.7	19.5
1969 Controllable	31.9	22.8	97.6	21.9	20.6
Misc. (uncontrollable)	0.2	12.2	17.5	6.8	0.5
Total	32.1	35.0	115.1	28.7	21.1
1970 Controllable	33.3	22.3	96.0	22.5	22.0
Misc. (uncontrollable)	0.1	3.2	4.7	4.8	0.1
Total	33.4	25.5	100.7	27.3	22.1

[a] Uncontrollable sources include forest fires, structural fires, coal refuse banks, some agricultural burning, and some solvent evaporation.

Over the last 10 years, NO_x emissions from steam-electric power plants increased at a rate of 7.4 percent.

Figures 1-7 through 1-9 present the 30-year emission trend lines. For TSP and SO_2, a breakdown by source category is also shown.

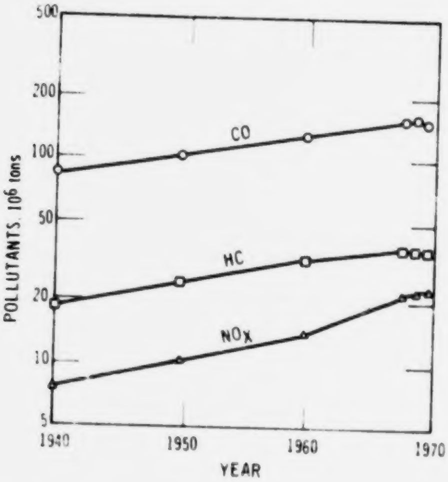

Figure 1-7. Nationwide emissions for HC, CO, and NO$_x$ (1940-1970).

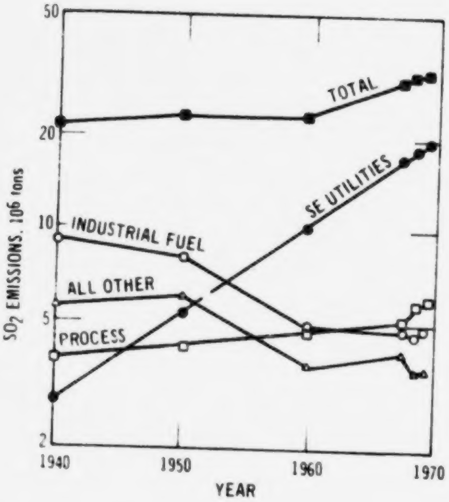

Figure 1-8. Nationwide SO$_2$ emissions (1940-1970).

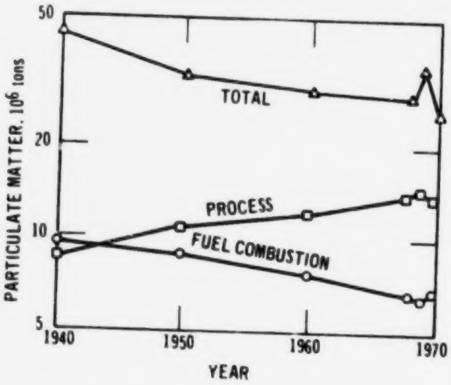

Figure 1-9. Nationwide particulate matter emissions (1940-1970).

1.3.3 Interpretation of Results

The result of the NASN SO_2 analysis has shown a very pronounced downward long-term trend over the 8-year period, with the composite average dropping over 50 percent. A review of nationwide emissions data over the same time interval, however, shows an increase in SO_2 emissions from approximately 27 million tons in 1964 to over 33 million tons in 1971 (an increase of over 20 percent). Thus, an apparent inconsistency exists between rising nationwide SO_2 emissions on the one hand and decreasing ambient concentrations on the other.

The following considerations may be helpful in explaining this apparent inconsistency. First, emissions are determined for the nation as a whole, whereas air quality data are generally collected for specific sites in center-city locations. Thus, the impact of changes in and about the sampling sites would have dramatic results on local air quality measurements but insignificant impact on nationwide emissions. Second, because of several factors, SO_2 emission rates in most urban areas are declining. The use of coal in residential and small commercial sources is practically non-existent. Cleaner fuels such as natural gas and distillate fuel oils have replaced coal to a large extent. The impact on total nationwide emissions as a result of this fuel replacement is relatively small, but the effect on local air quality is pronounced. Third, large point sources such as power plants are not able to locate near or in center-city areas. Strict local regulations and fuel availability are determining factors. Increased fuel transporation costs favor the generation of electricity near the fuel source - e.g., mine-mouth operations in Pennsylvania. Finally, emissions generated at ground level, such as from area sources, have a much larger impact on local ambient air quality than the same emissions from an elevated point source.

Although particulate matter concentrations, like SO_2, have shown a decrease since the early 1960's, the percent reduction has not been as dramatic. A conflict also arises with TSP because, again, nationwide emissions have shown a slight increase (about 10 percent) since 1960. The reasons for this apparent conflict are the same. The use of cleaner fuels for home heating and for office buildings would have significant impact on center-city monitors, but a small impact on total nationwide emissions. The increasing controls used on stationary sources such as power plants and industries, coupled with relocation, would also contribute to the decreasing air concentrations.

The percentage of improvement for TSP concentrations has not been as great as for SO_2, partly because of the presence of background or noncontrollable "emissions." Background concentrations of SO_2 are essentially zero for urban areas, whereas wind-blown dust and pollen result in particulate concentrations for which emission control plans will have no impact. For this reason, particulate emission reductions are not as effective in terms of percentage of air quality improvement as are similar reductions in SO_2 emissions.

2. INTRODUCTION

This report presents a comprehensive overview of the nation's air quality. Its findings are based on extensive monitoring activities conducted by Federal, State, and local air pollution control agencies and organized within established Air Quality Control Regions (AQCR's). In addition, the report describes the status of pollutant emissions in AQCR's and summarizes nationwide emission trends on a source category basis. Information is provided for the six pollutants for which National Ambient Air Quality Standards (NAAQS) have been set. Other air pollutants will be reviewed in future reports.

The following discussion is intended to provide both the historical perspective and critical orientation necessary for the proper interpretation and assessment of the data and information presented in this report.

2.1 GENERAL BACKGROUND

Regulations prescribing national primary and secondary air quality standards were issued by the Environmental Protection Agency (EPA) on April 30, 1971 (Appendix A). These standards cover suspended particulate matter, sulfur dioxide, carbon monoxide, photochemical oxidants, hydrocarbons, and nitrogen dioxide. The Clean Air Act, as amended (1970), specified that primary ambient air quality standards, designed to protect the public health, must be met nationally by 1975 unless a 2-year extension of this deadline is granted by the Administrator of EPA. Secondary National Ambient Air Quality Standards, designed to protect the public welfare from any known or anticipated adverse effects associated with the presence of air pollutants in the ambient air, must be achieved within a reasonable time. The States were required to adopt and submit to the Administrator a plan that provides for the implementation, maintenance, and enforcement of National Ambient Air Quality Standards within each AQCR (or portion thereof) within the State (Appendix B). Each State has since promulgated emission limitations in the form of legal regulations. Schedules for compliance with these regulations are currently being developed for all major sources. The compliance schedules specify emission-reduction timetables for these sources.

Most portions of the State Implementation Plans (SIP's) have been approved by EPA and are now being pursued. EPA has the responsibility for surveillance of the SIP's to determine whether they are being adequately supported and whether sufficient progress is being made toward meeting national air quality goals. Because of EPA's recognition of the deficiencies of much of the air quality data used to develop these plans, the States were required to establish air quality surveillance systems (meeting minimum criteria) that must be operational by 1974. Data submitted from the operation of these networks are to form the basis for assessing the degree to which NAAQS are realized. In addition, the States are required to submit to EPA, on a quarterly basis, all of the air quality data that they have obtained from their existing monitoring networks. These data are to be submitted to the EPA Regional Offices for examination for inconsistencies and errors. The corrected data are then to be forwarded to the Office of Air Quality Planning and Standards for inclusion in the National Aerometric Data Bank (NADB)(Appendix C). Emissions data are also required from the States in the form of semi-annual reports that are to be used for updating the emission information in the National Emissions Data Bank (NEDB) (Appendix C). Both air quality and emissions data will be assessed periodically to determine overall pollution trends and to provide an early warning of potential problems in source emission compliance or air quality standard achievement.

It is very probable that many stationary sources that were not already in compliance when the SIP's were being developed will not be able to comply until 1974 at the earliest. For this reason, emission regulations set forth in these plans are not likely to result in significant air quality improvement before the mid-1970's. Any significant downward trends in emissions or improvements in air quality presented in this report are most probably the result of previous State or local controls; thus, downward trends or improvements through 1971 should be so interpreted.

2.2 AIR QUALITY SURVEILLANCE PROGRAMS

The following is a brief account of the nature and purpose of Federal and State air quality monitoring programs.

2.2.1 Federal Programs

There are currently six Federal monitoring programs in operation. Two of these (NASN and CAMP) were found suitable for trend analysis. The other four (particle size network, membrane filter network, precipitation network, and CHESS) were designed for special purposes and do not yield data suitable for long-term evaluation.

Many of the data on which air quality analyses are based are derived from information obtained from EPA's National Air Surveillance Network (NASN). The NASN was established in the mid-1950's with the assistance and cooperation of State and local agencies. Currently, there are approximately 260 stations that monitor total suspended particulate matter (TSP), whereas sulfur dioxide (SO_2) is monitored at 200 stations. Both TSP and SO_2 have been collected on a bi-weekly modified random sampling schedule that produces 26 daily samples per station per year. Each pollutant is monitored and analyzed using standard EPA reference methods or their equivalents (Appendix A).

Nitrogen dioxide (NO_2) is also monitored at most of the NASN sites. Recent studies, however, have shown that the technique used (Jacobs-Hochheiser) is inadequate for accurately assessing ambient NO_2 levels. An experimental NASN NO_2 program was initiated in 1972. This program employs a modification of the Jacobs-Hochheiser method and will, hopefully, yield more accurate results. Until the technique has been fully validated over a period of time, the monitoring information developed from it will not be used to assess ambient NO_2 levels.

The Continuous Air Monitoring Program, which supplements the NASN, uses instrumentation that continuously monitors the concentrations of various air pollutants. CAMP stations have been operating in six major urban areas for nearly 10 years, and their accumulated data provide a detailed record of air quality information. Changes in instrumentation and operating techniques make trend analyses of the data difficult in some cases, however.

2.2.2 State Programs

In addition to EPA's air monitoring networks as described above, there are other networks operated by State and local governments. A considerable amount of State-acquired data is already stored in EPA's data banks. This is a result of a voluntary program begun in the 1960's through which a number of States submitted air quality data in EPA's Storage and Retrieval of Aerometric Data (SAROAD) format (Appendix C). Because of the voluntary nature of the program until recently, NADB contains air quality data from only about half the States. The time required by the States to process and report information is such that the 1972 State air quality data are not contained in this report.

Implementation plan requirements (Appendix B) require the States to submit air quality and emissions data on a quarterly and semi-annual basis, respectively. As of March 1973, few data had been received as a result of these requirements, and it is not expected that significant amounts of the State-derived information will be transmitted to EPA until the summer of 1973. For the most part, data that were submitted by the States in support of their implementation plans are not complete and were not presented in a format readily amenable to analysis. For the purposes of this report, however, such SIP air quality data as are considered adequate are cited on an example basis. The number of such examples is too small to permit extensive comparison between EPA-derived and State-derived air quality information.

2.3 EMISSIONS SURVEILLANCE PROGRAMS

The following is a brief presentation of surveillance programs through which data are obtained pertaining to air pollutant emissions. The collection of emissions data has been a part of Federal and State control programs for many years. The data collection in the past, however, has been performed only for special purposes (e.g., abatement activity) or for only a limited area. Not until the passage of the Clean Air Act, as amended (1967), were emissions data collected extensively throughout the country. The data collected under the authority of this Act were used in delineating boundaries of AQCR's. The inventories conducted were of a rapid-survey type in that not all sources were surveyed on an individual basis. Many were considered collectively as area sources.

As the requirements of the implementation planning program were relegated to State agencies, it became necessary to collect emissions data throughout the country for all Regions (not restricted to major metropolitan areas) and to provide procedures for regular revisions and updating of the emissions estimates. Thus, the National Emissions Data System (NEDS) evolved. This system provides for storage and retrieval of detailed emissions data on both point and area sources. A more thorough discussion of the NEDS is presented in Appendix C.

2.4 REPORT LIMITATIONS

The significance of this report lies in the fact that it is the first major attempt in the history of the Federal Air Program to present a comprehensive analysis and interpretation of data and information collected from Federal and State air quality and emissions surveillance activities. Previous reports addressed themselves to specific monitoring operations (e.g., particular geographical regions) with relatively limited statistical treatment.

This report, to the degree that it is more extensive in terms of scope and content, is correspondingly more sensitive to limitations imposed by the inadequacy of past surveillance activities. The inadequacy of these activities is the consequence of several contributory factors that include geographical, spatial, and temporal sampling maldistribution, inconsistencies in sampling and analytic methods, lack of systematic validation of acquired data, and insufficient monitoring resources. It is obvious that uncertainties associated with the developed data base must of necessity limit the degree of confidence that can be placed on interpretations derived from it. Nevertheless, it is believed that this report will serve a useful function in establishing a prototype that, through subsequent progressive upgrading and refinement of the existing data base, will eventually evolve into a truly complete and reliable representation of air quality and emission trends, and of progress toward the achievement of National Ambient Air Quality Standards.

3. STATUS OF NATIONAL AIR QUALITY AND EMISSIONS DATA

This chapter presents a summary account of national air quality and emissions based on data collected up to the end of calender year 1971. Because of delays in State information processing and transmittal, the data for 1972 are not yet available in sufficient amounts to warrant their inclusion in this report. The discussions of both air quality and emissions data are preceded by descriptions of the basic collection mechanisms by which these data were obtained; these descriptions assess the operation of the mechanisms in terms of implementation plan objectives. Summaries of the collected data are then presented on both a national and an AQCR basis. These data presentations include interpretive comments designed to highlight significant findings where it is believed that the data on which they are based are sufficiently reliable to permit the inferences drawn.

It is expected that the summary data presented in this chapter will be of value in providing an assessment of the degree to which the States are attaining compliance with the requirements that they must meet under the implementation planning program. In interpreting the data contained in this chapter, it should be understood that the program requirements are to be achieved progressively over a period ending not later than 1977. This is to emphasize that the report portrays a particular cross section of an evolving process rather than a final result.

The procedural details of the implementation planning process and the air quality standards these processes are to achieve are fully described in Appendices A and B. An important aspect of the national air quality program is the requirement that the States establish specific implementation plans for their AQCR's. These plans must take into account the fact that pollutant concentrations in some AQCR's are far more severe than in others. To insure effective sequencing of State plan development, the Federal Regulations set forth a Priority Classification system according to which all AQCR's are grouped into three priority categories. These categories are based on the severity of pollutant concentrations either directly measured or estimated. A given AQCR is categorized by individual pollutant rather than on an overall basis. Thus, a Region may be classified as Priority I (most severe) for one pollutant and Priority III for another. A list of these priorities appears later in this chapter. This Priority Classification system, which is designed to guide the States in allocating resources for pollution control measures, provides an indication of the relative complexity of the required measures.

The collection of emissions inventory information on an organized national basis was initiated as a component of the implementation planning program. Partly because of its relatively recent origin, and partly because of the magnitude and complexity of the effort required to obtain emissions data, the total information accumulated to date is far less valuable in terms of usefulness for analytic and projective purposes than that available from air quality measurements. Further, it must be recognized that, unlike most air quality data, emissions data consists, in large part, of computed or estimated values as opposed to values derived from physical measurement. This does not imply, however, that current emissions data are not of great value in developing AQCR implementation plan strategies. These data are most useful, for example, in identifying specific or categorical pollutant sources for which control measures should be developed. This importance of emissions data is considerably accentuated when AQCR air quality data are missing or incomplete.

Both air quality and emissions data are first presented on a nationwide basis to provide a preliminary overview. Data are then tabulated on an AQCR basis in order to display prevailing pollution patterns within any specific Region of interest.

Review of the data presented in this and the following chapter should be conducted with the understanding that the interpretation of a specific measurement should take into account not only its degree of validity *per se* but also its usefulness as a representative indicator of air quality. The reason is that this usefulness is influenced by many factors that are independent of the measurement process. Such factors, which include meteorological and topographic effects, atmospheric reactions and removal processes, and sensor location, all influence the degree to which a given measurement is representative of air quality. These considerations are more fully discussed in Appendix D.

3.1 ACQUISITION OF AIR QUALITY DATA

In order to understand the significance and implications of the national and regional air quality data presented below, it is first necessary to acquire familiarization with the principles and methodologies underlying the overall data acquisition process. This information is detailed in Appendices A and B. The following discussion briefly reviews these areas and provides a basis for evaluating tabular data that indicate the status of SIP's as of the end of calender year 1971 with respect to implementation plan requirements. It should be noted that small discrepancies may appear among various air quality summary tables. These arise because of daily updates of NADB information.

As explained in the Introduction, air quality standards have been set for six pollutants (sulfur dioxide, suspended particulate matter, carbon monoxide, nitrogen dioxide, photochemical oxidants, and hydrocarbons) in terms of maximum permissible peak and average concentrations. For each pollutant, reference methods and their equivalent procedures, where applicable, have been established for sampling techniques and analyses. Data obtained from surveillance programs indicate the degree to which the measured air quality relates to established standards. This degree is an important factor in determining the Priority Classification of a given AQCR with respect to each pollutant.

Under the implementation planning program, the number of monitoring stations to be established in a given AQCR is a function of both its Priority Classification and its population. As stated earlier, the required minimum number of stations that are prescribed for each AQCR must be operational by 1974.

The relationship between the number of stations now existing and the minimum national totals on a pollutant basis that must be operational by 1974 provides one measure of progress in implementation plan achievement. The number of monitoring stations both existing and required under the implementation planning process by pollutant and method on a nationwide basis is presented in Table 3-1. As this table shows, the number of existing stations in a given category, in some instances, exceeds the 1974 legal requirement. The national totals do not, of course, indicate geographic distribution and, because of this, some table entries may appear to be overly optimistic. Accordingly, a similar breakdown is presented on an AQCR basis in Table 3-2.

Table 3-3 provides information on the level of agency responsible for the operation of various pollutant monitors. This table lists only those monitors whose data are contained in the NADB. A breakdown is presented according to the validity of sample information. Valid data are for those stations that satisfy the annual validity criteria.*

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*The criteria for 24-hour data require that a minimum of five samples be collected per quarter. The samples can be distributed in any manner among the months. When no samples are collected in one month and either of the other two months has less than two valid samples, the data are not valid. The criteria for continuous data (1-hour) are that at least 75 percent of the 1-hour observations must be valid for the year.

Table 3-1. NATIONWIDE SUMMARY OF STATE MONITORING INVENTORIES AS REPORTED IN STATE IMPLEMENTATION PLANS

Pollutant/method	Number of monitors			
	1971 existing	1974 proposed	Legal requirement	Percent increase, proposed/existing
TSP/tape	397	901	497	127
TSP/hi-vol	2538	3511	1372	38
SO_2/continuous	329	698	213	112
SO_2/West-Gaeke bubbler	541	1431	666	164
O_x/continuous	183	458	208	150
CO/NDIR continuous	197	457	133	132

As Table 3-3 shows, approximately 37 percent of the data stored in NADB for 1971 as of April 1973 can be considered valid. It is expected that as SIP monitoring objectives are realized, the percentage of valid data generated will increase significantly. The number of proposed stations based on SIP's is 8646, which implies a potential increase of ninefold in the national total of stations with valid monitoring data. This should raise the value of interpretations and the reliability of inferences based on future data to a far higher level than is now achievable. It is of the utmost importance that, as the number of monitors is increased, efforts are so directed as to ensure that data generated by all stations are valid to the highest degree possible. Only in this way can there be any assurance that the expansion and operation of the monitoring network will provide the basis for realizing NAAQS and assessing the effectiveness of control strategies. Appendix E presents both a more detailed State-by-State compilation of SIP required monitoring stations and a breakdown of NADB stations on the basis of their data validity.

Table 3-4 presents a summary of the number of air quality monitors by pollutant as compiled from the SIP's. A comparison is made with monitors reported in NADB for 1971 identifying both valid or invalid stations. The ratio of the total stations reported to NADB to the total stations reported by the States in their plans is nearly 0.6. A more detailed compilation by State is also presented in Appendix E.

3.2 SUMMARY OF AIR QUALITY DATA

Table 3-5 presents a summary of the AQCR's in terms of their Priority Classifications by pollutant, and Table 3-6 is a summary classification by pollutant and Priority Classification. Hydrocarbons are omitted because the HC standard is directly related to the oxidant standard. Thus, the Priority Classification of hydrocarbons is identical to that for oxidants.

Table 3-7 sorts the AQCR numbers by Priority Classification for each pollutant and presents the number of AQCR's in each classification that had at least one station exceeding one or more of the standards in 1969, 1970, or 1971.

Under suspended particulates. for example, the table lists Priority I AQCR's according to whether they meet all particulate standards or have exceeded one or more of these standards. In addition, Priority II and III AQCR's are listed each according to its standing with respect to the particulate standards based on the available data. Columns are included showing AQCR's with fragmentary data or with no data on record with the NADB for 1969, 1970, or 1971 as of mid-March 1973.

Table 3-2. NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
001	3	3	3	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
002	8	7	10	3	4	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
003	6	6	8	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
004	10	10	16	5	5	5	3	3	0	1	1	0	3	3	1	3	3	1	0	0	0	0	0	0
005	13	26	20	9	9	0	9	18	0	4	5	0	0	0	0	4	4	0	0	0	0	0	0	0
006	3	3	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
007	10	14	20	4	4	0	7	7	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0
008	5	10	5	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
009	4	9	1	1	1	0	1	1	1	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0
010	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
011	1	8	0	0	0	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
012	3	12	10	1	2	0	3	5	0	1	5	3	0	0	0	0	0	0	0	1	0	0	0	0
013	6	17	17	1	2	1	3	3	3	1	1	0	2	2	1	2	2	1	6	6	6	0	2	2
014	5	24	19	1	2	0	5	12	6	1	4	3	0	0	0	0	0	0	1	11	5	0	0	0
015	11	22	22	6	9	7	8	3	2	3	8	5	3	4	2	3	3	2	10	10	2	0	1	1
016	3	10	5	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
017	4	7	6	2	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
018	9	16	11	3	4	1	1	10	1	0	1	0	0	2	1	2	3	1	9	11	6	0	0	0
019	3	6	3	1	2	*	1	2	*	0	0	*	0	0	*	0	0	*	0	0	*	0	0	*
020	1	5	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
021	1	2	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
022	2	17	5	1	4	*	1	10	*	0	3	*	0	3	*	0	3	*	0	0	*	0	3	*
023	1	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
024	28	25	18	8	9	0	3	8	7	1	17	17	11	24	18	11	27	25	10	6	0	0	19	19
025	3	5	5	1	5	0	1	0	0	0	0	0	0	1	1	2	4	5	0	0	0	0	3	4
026	3	15	11	1	1	0	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1
027	1	3	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
028	3	8	4	1	6	0	1	1	1	0	0	0	4	4	3	4	6	5	0	1	0	0	5	3
029	3	3	2	1	2	0	1	1	1	0	0	0	3	2	1	3	7	6	10	0	0	0	3	3
030	3	15	16	1	16	0	3	4	9	1	6	3	8	15	13	8	20	18	10	4	0	0	14	15
031	12	16	9	7	9	0	1	2	1	0	0	0	3	7	6	3	8	5	0	1	0	0	5	5
032	3	2	1	1	1	0	1	0	0	0	0	0	0	1	1	0	2	2	0	0	0	0	1	0
033	6	7	4	1	4	0	1	0	0	0	0	0	0	2	1	1	6	2	0	0	0	0	3	0
034	1	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
035	1	10	10	0	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
036	10	21	10	4	11	0	1	0	0	0	6	1	3	6	1	3	6	1	0	0	0	0	6	1
037	6	9	9	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
038	6	8	8	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
039	1	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
040	1	8	8	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
041	3	4	4	1	2	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
042	13	49	42	8	19	14	9	15	12	4	13	9	4	5	2	4	5	2	9	22	8	0	2	2
043	41	138	135	8	72	72	20	4	1	15	77	60	15	31	29	15	21	7	10	40	7	0	0	0

Table 3-2 (continued). NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
044	1	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
045	21	43	31	8	37	29	14	11	10	9	39	31	9	28	21	10	16	9	10	19	14	0	21	8
046	1	5	0	0	5	0	1	5	0	0	5	0	0	0	0	0	0	0	0	5	0	0	0	0
047	20	56	53	9	22	13	14	23	20	5	15	8	5	12	4	5	11	6	10	24	21	0	10	8
048	3	3	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	*	0	0	*
049	11	13	1	5	4	*	4	5	1	1	2	*	0	0	*	4	2	*	0	2	*	0	0	*
050	3	3	*	1	1	*	1	1	*	0	0	*	0	0	*	0	0	*	10	10	*	0	0	*
051	1	1	0	0	0	*	1	1	*	0	0	*	0	0	*	0	0	*	0	0	0	0	0	0
052	11	11	0	6	6	0	8	8	0	3	3	0	0	0	0	0	0	0	10	10	0	0	0	0
053	9	9	3	2	2	0	5	5	1	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0
054	7	7	5	2	3	1	5	5	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0
055	8	14	13	3	2	1	3	5	3	1	1	1	0	1	1	0	1	1	8	5	3	0	0	0
056	12	21	21	7	7	2	9	8	0	4	5	4	0	3	3	0	1	1	10	10	1	0	1	1
057	3	3	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
058	9	11	8	2	7	2	4	7	2	2	2	0	0	0	0	0	0	0	0	2	2	0	0	0
059	3	5	2	1	1	0	3	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
060	3	12	7	1	3	1	1	8	5	0	1	1	0	2	1	0	2	1	0	9	5	0	0	0
061	5	12	10	1	1	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
062	7	24	23	2	3	2	3	4	0	1	3	5	2	2	2	0	2	2	0	0	0	0	0	0
063	5	5	3	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
064	3	8	5	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
065	9	9	7	4	3	1	5	3	1	3	3	1	0	0	0	0	0	0	0	1	1	0	0	0
066	1	3	2	0	0	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
067	25	102	102	8	34	26	16	54	46	10	30	27	10	14	7	10	12	3	10	27	11	0	9	9
068	5	6	3	2	3	0	2	3	1	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0
069	7	7	6	2	2	1	2	2	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
070	14	41	34	8	18	14	10	4	2	5	15	11	5	14	8	5	12	9	10	2	0	0	11	8
071	5	5	4	1	1	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
072	6	28	18	2	4	4	3	26	14	1	2	2	0	1	1	0	1	1	0	27	16	0	0	1
073	3	8	6	1	2	0	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
074	1	2	1	0	1	0	3	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
075	8	8	6	3	2	1	3	6	0	1	2	1	0	1	1	0	1	1	0	0	1	0	1	0
076	3	6	4	1	2	0	3	4	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0
077	6	33	23	2	10	8	3	23	14	1	13	10	0	3	1	0	3	1	0	25	15	0	1	1
078	10	22	16	4	10	0	6	18	4	2	7	0	0	5	0	2	3	0	10	18	2	0	2	0
079	13	59	33	7	12	4	3	33	10	1	10	2	0	10	2	3	10	2	10	33	0	0	7	1
080	10	25	18	4	7	5	8	18	11	3	8	6	3	2	0	3	2	0	10	17	11	0	0	0
081	3	4	2	1	1	0	1	3	1	0	1	0	0	0	0	0	0	0	0	3	1	0	0	0
082	10	23	20	3	8	3	3	15	8	1	4	1	0	1	0	0	1	0	0	8	1	0	0	0
083	3	8	4	1	1	0	3	5	1	1	1	0	0	0	0	0	0	0	0	4	1	0	0	0
084	9	15	12	3	3	0	6	7	1	2	2	0	0	0	0	0	0	0	0	6	0	0	0	0
085	9	14	14	3	3	1	4	4	1	1	1	0	0	0	0	0	0	0	8	9	1	0	0	0
086	3	2	2	0	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-2 (continued). NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HI VOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
087	4	4	1	1	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
088	7	12	12	2	3	1	1	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
089	3	3	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
090	1	[illegible]	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
091	1	2	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
092	8	13	6	3	3	0	1	2	2	0	0	0	0	1	1	2	2	1	0	1	1	0	0	0
093	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
094	11	37	34	6	6	5	1	9	8	0	3	0	3	5	6	3	5	2	0	9	3	0	3	2
095	6	9	4	1	2	0	1	8	2	0	0	0	0	1	0	0	1	0	0	9	2	0	0	0
096	6	6	4	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
097	5	5	4	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
098	1	6	4	0	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0
099	7	14	5	2	2	0	1	12	1	0	0	0	0	2	0	2	2	1	0	12	1	0	0	0
100	5	5	2	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
101	3	16	5	1	2	0	1	14	5	0	1	0	0	1	0	0	1	0	0	16	5	0	0	0
102	3	20	5	1	3	2	1	20	5	0	1	2	0	1	0	0	1	0	0	20	5	0	0	0
103	8	37	24	3	7	5	1	19	8	0	3	0	0	1	0	0	1	0	0	18	8	0	3	0
104	3	17	1	1	2	1	1	16	1	0	1	0	0	1	0	0	1	0	0	17	1	0	0	0
105	1	16	1	0	2	1	1	15	1	0	1	0	0	1	0	0	1	0	0	16	1	0	0	0
106	3	13	3	1	2	*	11	22	1	6	12	*	0	6	*	6	12	*	0	0	1	0	6	*
107	3	13	6	1	3	0	3	11	1	1	2	1	0	0	0	0	0	0	0	3	1	0	0	0
108	1	2	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	3	6	0	1	1	0	3	6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
110	6	6	6	1	1	1	3	5	5	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
111	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112	3	3	3	1	1	1	3	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
113	5	7	7	1	4	2	3	3	3	1	6	4	0	3	1	0	0	0	0	3	3	0	0	0
114	3	3	3	1	1	0	1	3	3	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0
115	13	32	20	8	13	11	9	15	1	4	10	8	4	12	10	4	12	10	10	15	1	0	0	0
116	1	2	2	0	0	0	1	2	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
117	3	9	6	1	2	1	1	9	6	0	2	1	0	1	0	0	1	0	0	9	6	0	1	0
118	7	10	3	2	2	0	3	13	3	1	2	0	0	1	0	0	1	0	2	10	3	0	1	0
119	15	23	19	8	9	6	11	23	19	6	12	6	6	6	3	6	6	3	10	23	19	0	3	0
120	12	31	23	7	7	2	8	27	23	3	6	0	0	5	0	0	5	0	10	31	23	0	1	0
121	10	29	22	4	6	1	8	15	8	3	4	0	0	3	0	0	3	0	0	14	5	0	1	0
122	3	42	25	1	6	1	0	11	4	0	5	2	0	3	0	0	1	0	10	11	4	0	2	1
123	18	42	37	8	17	0	12	13	1	7	17	12	0	7	0	0	4	0	10	13	1	0	3	0
124	8	22	27	3	4	0	6	7	1	2	10	6	0	2	2	2	2	0	8	9	0	0	2	0
125	3	10	4	1	2	0	3	4	1	1	1	0	0	0	0	0	0	0	0	4	1	0	0	0
126	1	21	7	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0
127	3	7	7	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	3	17	17	1	3	3	3	8	7	1	1	0	0	0	0	0	0	0	0	2	2	0	0	0
129	7	20	20	2	4	4	3	5	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-2 (continued). NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
130	4	6	6	1	2	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	12	24	24	8	13	13	9	9	8	4	10	7	4	4	4	0	5	3	10	10	9	0	3	3
132	3	4	4	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	1	4	4	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134	1	3	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	3	6	4	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	10	24	*	4	7	*	1	24	*	0	0	*	0	1	*	0	1	*	0	0	*	0	0	*
137	3	9	9	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	1	8	8	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	9	10	10	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	3	4	4	1	1	0	3	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
141	1	1	1	0	0	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
142	3	3	1	1	1	0	3	3	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0
143	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144	5	5	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	3	7	7	1	2	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146	1	9	9	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147	3	7	7	1	1	0	3	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
148	5	12	12	1	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1
149	1	4	2	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
150	1	2	2	0	2	2	3	5	0	1	2	2	2	2	2	0	0	0	0	0	0	0	0	0
151	12	24	24	8	10	1	3	0	0	1	10	1	0	10	1	0	9	0	10	1	0	0	19	0
152	8	12	12	2	3	2	1	2	2	0	0	0	0	2	2	2	2	2	0	2	2	0	0	0
153	7	20	16	2	3	0	5	11	1	2	7	0	2	7	*	2	7	*	0	3	1	0	6	0
154	1	3	2	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
155	1	6	5	0	1	0	1	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
156	1	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
157	1	7	6	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
158	11	47	35	5	3	1	3	0	0	1	4	2	3	3	1	3	2	1	0	*	*	0	*	*
159	4	26	10	1	2	1	4	*	*	1	6	*	0	*	*	0	2	1	0	*	*	0	*	*
160	3	34	14	1	1	1	3	3	3	1	2	1	0	2	0	3	1	1	10	*	*	0	*	*
161	11	57	34	6	6	4	3	2	2	1	7	2	0	2	2	0	2	2	0	*	*	0	*	*
162	11	54	42	5	5	2	8	6	1	3	6	2	0	3	2	0	3	2	10	*	*	0	*	*
163	3	17	8	1	1	0	3	0	0	1	1	0	0	0	0	0	1	0	0	*	*	0	*	*
164	3	28	15	1	1	0	3	0	0	1	4	0	0	2	0	0	0	0	0	*	*	0	*	*
165	7	27	*	2	5	*	1	18	*	0	0	*	0	0	*	0	0	*	0	0	0	0	0	0
166	10	15	*	4	4	*	1	15	*	0	0	*	0	1	*	0	1	*	0	0	0	0	0	0
167	14	45	*	4	10	*	6	29	*	1	1	*	0	2	*	3	2	*	0	0	0	0	0	0
168	6	13	*	1	2	*	1	13	*	0	0	*	0	0	*	0	1	*	0	0	0	0	0	0
169	3	8	**	1	3	*	1	7	*	0	0	*	0	0	*	0	0	*	0	0	0	0	0	0
170	3	16	*	1	4	*	1	15	*	0	0	*	0	0	*	0	0	*	0	0	0	0	0	0
171	6	23	*	1	11	*	1	14	*	0	0	**	0	0	*	0	1	*	0	0	0	0	0	0
172	3	12	12	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0

Table 3-2 (continued). NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
173	10	27	16	4	5	5	3	18	9	1	5	5	0	4	1	3	3	2	10	19	10	0	5	2
174	16	82	73	8	8	0	11	22	18	6	6	2	0	6	0	6	6	2	10	20	16	0	7	2
175	3	3	1	1	1	0	3	3	0	1	1	0	0	0	0	0	0	0	0	3	0	0	0	0
176	10	11	3	5	4	1	1	6	0	0	3	0	0	3	0	3	4	0	10	3	0	0	10	0
177	3	4	3	1	1	0	5	5	0	2	2	0	0	0	0	0	0	0	0	5	0	0	0	0
178	14	24	22	6	7	0	3	6	0	1	6	0	0	4	0	0	4	0	0	6	0	0	4	0
179	6	8	7	1	4	3	3	3	0	1	5	0	0	0	0	0	0	0	0	4	1	0	0	0
180	1	6	2	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0
181	7	24	29	2	11	11	5	10	10	2	2	0	0	0	0	0	0	0	0	4	4	0	0	0
182	1	4	3	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
183	3	5	0	1	1	0	3	1	0	1	4	0	0	0	0	0	0	0	0	4	0	0	0	0
184	9	29	29	3	5	3	1	1	1	0	1	0	0	2	2	2	2	1	0	0	0	0	0	0
185	1	5	4	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	9	24	18	3	3	0	1	3	3	0	1	0	0	2	1	2	2	1	0	0	0	0	0	0
187	1	8	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188	1	12	11	0	0	0	1	4	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
189	1	13	9	0	0	0	1	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	3	4	4	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
191	3	3	3	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
192	1	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193	12	21	58	7	7	6	3	3	4	1	4	4	4	6	5	4	4	3	0	4	0	0	0	1
194	3	5	5	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195	10	8	0	4	3	0	1	0	0	0	3	0	0	3	0	0	3	0	10	0	0	0	3	0
196	11	20	20	5	8	0	3	0	0	1	8	0	0	8	0	0	8	0	10	0	0	0	8	0
197	15	35	21	8	21	7	10	0	0	5	18	7	5	9	2	5	10	3	10	0	0	0	9	3
198	3	4	3	0	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
199	6	12	12	1	1	1	4	4	4	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0
200	3	12	12	0	1	1	1	6	6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
201	1	3	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
202	8	15	12	3	3	1	1	11	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
203	1	3	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
204	3	3	3	1	1	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
205	1	2	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
206	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
207	14	37	30	7	7	1	10	18	3	4	4	1	0	1	1	0	1	1	0	8	0	0	1	0
208	10	30	30	4	4	1	3	19	0	1	2	0	0	1	1	3	3	1	0	17	9	0	1	0
209	7	8	8	2	2	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
210	3	10	2	1	1	0	3	11	2	1	3	0	0	3	*	0	3	*	0	0	2	0	3	0
211	3	12	8	1	1	0	6	9	4	2	3	0	0	4	*	0	4	*	0	0	4	0	4	0
212	3	13	7	1	1	0	1	13	3	0	2	0	0	5	*	3	5	*	0	0	3	0	5	0
213	7	10	5	2	2	0	1	6	*	0	2	0	0	3	*	0	3	*	0	0	0	0	3	0
214	7	24	12	2	2	0	5	17	4	2	6	0	0	7	*	2	7	*	7	0	4	0	7	0
215	3	37	23	1	1	0	1	18	2	0	2	*	0	13	*	5	13	*	10	0	0	0	13	0

Table 3-2 (continued). NUMBER OF MONITORING STATIONS REQUIRED, PROPOSED, AND EXISTING IN EACH AQCR

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANT			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
AQCR	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
216	13	60	52	8	11	3	9	51	30	4	21	0	0	19	*	4	21	*	10	0	30	0	19	0
217	3	16	10	1	1	0	1	10	1	0	3	0	0	6	*	3	6	*	0	0	1	0	6	0
218	3	8	5	1	1	0	3	9	3	1	4	0	0	4	*	0	4	*	0	0	3	0	4	0
219	1	3	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
220	9	11	6	3	5	5	7	9	4	2	6	5	2	5	4	2	5	4	9	9	4	0	6	5
221	3	5	3	1	1	0	3	3	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0
222	7	18	18	2	2	1	1	2	2	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0
223	10	15	9	4	4	2	3	11	5	1	3	0	0	3	1	3	3	1	10	13	5	0	0	0
224	6	8	0	2	2	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225	8	20	14	3	3	1	0	8	3	0	2	0	0	2	1	2	2	1	8	8	2	0	0	0
226	8	21	12	3	6	5	1	6	5	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0
227	3	6	5	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
228	3	13	13	1	1	0	3	1	0	1	3	3	0	0	0	0	0	0	0	0	0	0	0	0
229	12	24	24	8	13	13	3	0	0	1	14	14	4	4	4	4	4	4	10	10	0	0	3	3
230	6	8	8	1	2	2	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
231	1	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
232	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
233	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
234	6	14	14	1	4	2	1	8	8	0	0	0	0	1	1	0	3	3	0	0	0	0	0	0
235	6	6	6	1	6	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
236	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
237	3	15	15	1	1	1	1	8	8	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0
238	1	5	4	0	0	0	1	2	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0
239	12	32	32	7	9	1	3	7	7	1	9	4	0	9	1	4	9	4	10	3	3	0	6	1
240	3	6	6	1	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241	3	3	1	1	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
242	3	3	2	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
243	1	4	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
244	3	22	4	1	7	0	3	3	1	1	19	0	0	1	0	0	0	0	0	19	3	0	0	0
245	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
246	1	2	0	0	1	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
247	3	6	6	1	1	1	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0

*Data in State Implementation Plans were incomplete

Table 3-3. NUMBER OF MONITORS OPERATED BY FEDERAL, STATE, AND LOCAL STATIONS IN NADB, 1971

Pollutant/method	Federal		State		Local		Total		Total
	Valid	Invalid[a]	Valid	Invalid[a]	Valid	Invalid[a]	Valid	Invalid[a]	
TSP/tape	0	1	20	15	13	65	33	81	114
TSP/hi-vol	166	122	343	595	146	195	655	912	1567
SO_2/continuous	2	13	10	20	13	29	25	62	87
SO_2/West-Gaeke bubbler	77	126	25	122	29	46	131	294	425
O_x/continuous	4	26	8	28	18	42	30	96	126
CO/NDIR continuous	2	29	19	23	18	37	39	89	128
NO_2/colorimetric (Saltzman) continuous	3	9	9	14	20	22	32	45	77
NO_2/bubbler	-	-	-	-	-	-	-	-	-
Total	254	326	434	817	257	436	945	1579	2524
Grand total	580		1251		693		2524		

[a] Invalid because of insufficient data for statistical calculations.

Table 3-4. COMPARISON OF MONITORS REPORTED IN SIP's AND NADB, 1971

Pollutant/method	Number of monitors				Ratio of total NADB to SIP
	SIP	NADB			
		Total	Valid	Invalid[a]	
TSP/tape	397	114	33	81	0.29
TSP/hi-vol	2538	1567	655	912	0.62
SO_2/continuous	329	87	25	62	0.26
SO_2/West-Gaeke bubbler	541	425	131	294	0.79
O_x/continuous	183	126	30	96	0.69
CO/NDIR continuous	197	128	39	89	0.65

[a] Data incomplete or not well distributed enough to permit calculation of annual statistics.

Based on data available in NADB, 12 TSP Priority I or IA AQCR's met all standards for 1971, 7 met all standards for 1970, and 11 met all standards for 1969. More importantly, in 1971, 7 Priority III AQCR's exceeded the primary annual standard (2 others exceeded only the secondary standard), and 5 exceeded the primary 24-hour standard (10 others exceeded only the secondary standard). The fact that Priority I AQCR's have met or are meeting NAAQS is interesting but not too important because data limitations do not permit us to say that NAAQS are being met everywhere in the Region. The fact that concentrations in excess of NAAQS are being measured in

Table 3-5. PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT

		PM	SO2	NO2	CO	OX
001	ALABAMA AND TOMBIGBEE RIVERS(ALA)	2	3	3	3	3
002	COLUMBUS-PHENIX CITY (ALA-GA)	1	3	3	3	3
003	EAST ALABAMA	1	3	3	3	3
004	METROPOLITAN BIRMINGHAM (ALA)	1	2	3	1	1
005	MOBILE-PENSACOLA-PANAMA CITY-S.MISS.(ALA-FLA-MISS)	1	1	3	3	1
006	SOUTHEAST ALABAMA	2	3	3	3	3
007	TENN. RIVER VALLEY-CUMBERLAND MTS (ALA-TENN)	1	1	3	3	3
008	COOK INLET (ALSK)	1	3	3	3	3
009	NORTHERN ALASKA	1	3	3	1	3
010	SOUTH CENTRAL ALASKA	3	3	3	3	3
011	SOUTHEASTERN ALASKA	3	1A	3	3	3
012	ARIZONA-NEW MEXICO SOUTHERN BORDER	1A	1A	3	3	3
013	CLARK-MOHAVE (ARIZ-NEV)	1	1A	1	1	1
014	FOUR CORNERS (ARIZ-COLO-N.M.-UTAH)	1A	1A	1A	3	3
015	PHOENIX-TUCSON (ARIZ)	1	1	1	1	1
016	CENTRAL ARKANSAS	2	3	3	3	3
017	METROPOLITAN FORT SMITH (ARK-OKLA)	2	3	3	3	3
018	METROPOLITAN MEMPHIS (ARK-MISS-TENN)	1	3	1	3	1
019	MONROE-EL DORADO (ARK-LA)	2	3	3	3	3
020	NORTHEAST ARKANSAS	3	3	3	3	3
021	NORTHWEST ARKANSAS	3	3	3	3	3
022	SHREVEPORT-TEXARKANA-TYLER (ARK-LA-OKLA-TEX)	2	3	3	3	3
023	GREAT BASIN VALLEY (CALIF)	3	3	3	3	3
024	METROPOLITAN LOS ANGELES (CALIF)	1	2	1	1	1
025	NORTH CENTRAL COAST (CALIF)	2	3	3	3	1
026	NORTH COAST (CALIF)	2	3	3	3	3
027	NORTHEAST PLATEAU (CALIF)	3	3	3	3	3
028	SACRAMENTO VALLEY (CALIF)	2	3	3	1	1
029	SAN DIEGO (CALIF)	2	3	1	1	1
030	SAN FRANCISCO BAY AREA (CALIF)	2	2	1	1	1
031	SAN JOAQUIN VALLEY (CALIF)	1	3	3	1	1
032	SOUTH CENTRAL COAST (CALIF)	3	3	3	3	3
033	SOUTHEAST DESERT (CALIF)	1	3	3	3	1
034	COMANCHE (COLO)	3	3	3	3	3
035	GRAND MESA (COLO)	3	3	3	3	3
036	METROPOLITAN DENVER (COLO)	1	3	3	1	1
037	PAWNEE (COLO)	1	3	3	3	3
038	SAN ISABEL (COLO)	1	3	3	3	3
039	SAN LUIS (COLO)	3	3	3	3	3
040	YAMPA (COLO)	3	3	3	3	3
041	EASTERN CONNECTICUT	2	3	3	3	3
042	HARTFORD-NEW HAVEN-SPRINGFIELD (CONN-MASS)	1	1	1	1	1
043	NEW JERSEY-NEW YORK-CONNECTICUT	1	1	1	1	1
044	NORTHWESTERN CONNECTICUT	3	3	3	3	3
045	METROPOLITAN PHILADELPHIA (DEL-N.J.-PA)	1	1	1	1	1
046	SOUTHERN DELAWARE	3	3	3	3	3
047	NATIONAL CAPITAL (D.C.-MD-VA)	1	1	1	1	1
048	CENTRAL FLORIDA	2	3	3	3	3
049	JACKSONVILLE-BRUNSWICK (FLA-GA)	1	2	3	3	1

Table 3-5 (continued). PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT

		PM	SO2	NO2	CO	OX
050	SOUTHEAST FLORIDA	2	3	1	3	3
051	SOUTHWEST FLORIDA	3	3	3	3	3
052	WEST CENTRAL FLORIDA	1	1	1	3	3
053	AUGUSTA-AIKEN (GA-S.C.)	1	2	3	3	3
054	CENTRAL GEORGIA	1	1	3	3	3
055	CHATTANOOGA (GA-TENN)	1	2	1	3	3
056	METROPOLITAN ATLANTA (GA)	1	1	1	3	3
057	NORTHEAST GEORGIA	2	3	3	3	3
058	SAVANNAH-BEAUFORT (GA-S.C.)	1	1	3	3	3
059	SOUTHWEST GEORGIA	2	2	3	3	3
060	HAWAII	2	3	3	3	3
061	EASTERN IDAHO	1	1A	3	3	3
062	EASTERN WASHINGTON-NORTHERN IDAHO	1	1A	3	1	3
063	IDAHO (REMAINDER)	1	3	3	3	3
064	METROPOLITAN BOISE (IDAHO)	2	3	3	3	3
065	BURLINGTON-KEOKUK (ILL-IOWA)	1	1	3	3	3
066	EAST CENTRAL ILLINOIS	3	2	3	3	3
067	METROPOLITAN CHICAGO (ILL-IND)	1	1	1	1	1
068	METROPOLITAN DUBUQUE (ILL-IOWA-WISC)	1	3	1A	3	3
069	METROPOLITAN QUAD CITIES (ILL-IOWA)	1	3	3	3	3
070	METROPOLITAN ST. LOUIS (ILL-MO)	1	1	1	1	1
071	NORTH CENTRAL ILLINOIS	2	1A	3	3	3
072	PADUCAH-CAIRO (ILL-KY)	1	2	3	3	3
073	ROCKFORD-JANESVILLE-BELOIT (ILL-WISC)	2	3	3	3	3
074	SOUTHEAST ILLINOIS	3	2	3	3	3
075	WEST CENTRAL ILLINOIS	1	1A	3	3	3
076	EAST CENTRAL INDIANA	2	2	3	3	3
077	EVANSVILLE-OWENSBORO-HENDERSON (IND-KY)	1	2	3	3	3
078	LOUISVILLE (IND-KY)	1	1	1	3	1
079	METROPOLITAN CINCINNATI (IND-KY-OHIO)	1	2	1	3	1
080	METROPOLITAN INDIANAPOLIS (IND)	1	1	1	1	1
081	NORTHEAST INDIANA	2	3	3	3	3
082	SOUTH BEND-ELKHART-BENTON HARBOR (IND.-MICH)	1	1A	3	3	3
083	SOUTHERN INDIANA	1A	1A	3	3	3
084	WABASH VALLEY (IND)	1	1	3	3	3
085	METROPOLITAN OMAHA-COUNCIL BLUFFS (IOWA-NEB)	1	2	1	3	3
086	METROPOLITAN SIOUX CITY (IOWA-NEB-S.D.)	3	3	3	3	3
087	METROPOLITAN SIOUX FALLS (IOWA-S.D.)	2	3	3	3	3
088	NORTHEAST IOWA	1	3	3	3	3
089	NORTH CENTRAL IOWA	1A	3	3	3	3
090	NORTHWEST IOWA	3	3	3	3	3
091	SOUTHEAST IOWA	3	3	3	3	3
092	SOUTH CENTRAL IOWA	1	3	3	3	1
093	SOUTHWEST IOWA	3	3	3	3	3
094	METROPOLITAN KANSAS CITY (KAN-MO)	1	3	3	1	1
095	NORTHEAST KANSAS	1	3	3	3	3
096	NORTH CENTRAL KANSAS	1	3	3	3	3
097	NORTHWEST KANSAS	1	3	3	3	3
098	SOUTHEAST KANSAS	3	3	3	3	3

Table 3-5 (continued). **PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT**

		PM	SO2	NO2	CO	OX
099	SOUTH CENTRAL KANSAS	1	3	3	3	1
100	SOUTHWEST KANSAS	1	3	3	3	3
101	APPALACHIAN (KY)	2	3	3	3	3
102	BLUEGRASS (KY)	2	3	3	3	3
103	HUNTINGTON-ASHLAND-PORTSMOUTH-IRONTON (KY-OH-W.VA)	1	3	3	3	3
104	NORTH CENTRAL KENTUCKY	2	3	3	3	3
105	SOUTH CENTRAL KENTUCKY	3	3	3	3	3
106	SOUTHERN LOUISIANA-SOUTHEAST TEXAS	2	1	3	3	1
107	ANDROSCOGGIN VALLEY (ME-N.H.)	1A	1A	3	3	3
108	AROOSTOOK (ME)	3	3	3	3	3
109	DOWN EAST (ME)	1A	1A	3	3	3
110	METROPOLITAN PORTLAND (ME)	1	2	3	3	3
111	NORTHWEST MAINE	3	3	3	3	3
112	CENTRAL MARYLAND	2	2	3	3	3
113	CUMBERLAND-KEYSER (MD)	1	1	3	3	3
114	EASTERN SHORE (MD)	2	3	3	3	3
115	METROPOLITAN BALTIMORE (MD)	1	1	1	1	1
116	SOUTHERN MARYLAND	3	3	3	3	3
117	BERKSHIRE (MASS)	2	3	3	3	3
118	CENTRAL MASSACHUSETTS	1	2	1	3	3
119	METROPOLITAN BOSTON (MASS)	1	1	1	1	1
120	METROPOLITAN PROVIDENCE (MASS-R.I.)	1	1	1	3	3
121	MERRIMACK VALLEY-SOUTHERN NEW HAMPSHIRE (MASS-N.H.	1	1	3	3	3
122	CENTRAL MICHIGAN	2	3	1	3	3
123	METROPOLITAN DETROIT-PORT HURON (MICH)	1	1	1	3	3
124	METROPOLITAN TOLEDO (MICH-OHIO)	1	1	1	3	1
125	SOUTH CENTRAL MICHIGAN	2	2	3	3	3
126	UPPER MICHIGAN	3	3	3	3	3
127	CENTRAL MINNESOTA	2	3	3	3	3
128	SOUTHEAST MINNESOTA-LA CROSSE (MINN-WISC)	2	1A	3	3	3
129	DULUTH-SUPERIOR (MINN-WISC)	1	2	3	3	3
130	METROPOLITAN FARGO-MORRHEAD (MINN-N.D.)	2	3	3	3	3
131	MINNEAPOLIS-ST. PAUL (MINN)	1	1	1	1	3
132	NORTHWEST MINNESOTA	2	3	3	3	3
133	SOUTHWEST MINNESOTA	3	3	3	3	3
134	MISSISSIPPI DELTA	3	3	3	3	3
135	NORTHEAST MISSISSIPPI	2	3	3	3	3
136	NORTHERN PIEDMONT (N.C.)	1	3	3	3	3
137	NORTHERN MISSOURI	2	3	3	3	3
138	SOUTHEAST MISSOURI	3	3	3	3	3
139	SOUTHWEST MISSOURI	1	3	3	3	3
140	BILLINGS (MONT)	2	2	3	3	3
141	GREAT FALLS (MONT)	3	1A	3	3	3
142	HELENA (MONT)	1A	1A	3	3	3
143	MILES CITY (MONT)	3	3	3	3	3
144	MISSOULA (MONT)	1	3	3	3	3
145	LINCOLN-BEATRICE-FAIRBURY (NEB)	2	3	3	3	3
146	NEBRASKA (REMAINDER)	3	3	3	3	3
147	NEVADA (REMAINDER)	1A	1A	3	3	3

Table 3-5 (continued). PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT

		PM	SO2	NO2	CO	OX
148	NORTHWEST NEVADA	1	3	3	3	3
149	CENTRAL NEW HAMPHSIRE	3	3	3	3	3
150	NEW JERSEY (REMAINDER)	3	1A	3	1	3
151	NORTHEAST PENNSYLVANIA-UPPER DEL. VAL. (PENN-N.J.)	1	2	1	3	3
152	ALBUQUERQUE-MID RIO GRANDE (N. MEX)	1	3	3	3	1
153	EL PASO-LAS CRUCES-ALMAGORDO (N. MEX-TEX)	1	1	3	1	1
154	NORTHEAST PLAINS (N. MEX)	3	3	3	3	3
155	PECOS-PERMIAN BASIN (N. MEX)	3	3	3	3	3
156	SOUTHWESTERN MOUNTAINS-AUGUSTINE PLAINS (N. MEX)	3	3	3	3	3
157	UPPER RIO GRANDE VALLEY (N. MEX)	3	3	3	3	3
158	CENTRAL NEW YORK	1	2	3	1	1
159	CHAMPLAIN VALLEY (N.Y.-VT)	2	2	3	3	3
160	GENESEE-FINGER LAKES (N.Y.)	2	2	1	3	1
161	HUDSON VALLEY (N.Y.)	1	2	3	3	3
162	NIAGARA FRONTIER (N.Y.)	1	1	1	3	1
163	SOUTHERN TIER EAST (N.Y.)	2	2	3	3	3
164	SOUTHERN TIER WEST (N.Y.)	2	2	3	3	3
165	EASTERN MOUNTAIN (N.C.)	1	3	3	3	3
166	EASTERN PIEDMONT (N.C.)	1	3	3	3	3
167	METROPOLITAN CHARLOTTE (N.C.-S.C.)	1	2	3	3	1
168	NORTHERN COASTAL PLAIN (N.C.)	1	3	3	3	3
169	SANDHILLS (N.C.)	2	3	3	3	3
170	SOUTHERN COASTAL PLAIN (N.C.)	2	3	3	3	3
171	WESTERN MOUNTAIN (N.C.)	1	3	3	3	3
172	NORTH DAKOTA (REMAINDER)	2	3	3	3	3
173	DAYTON (OHIO)	1	2	1	3	1
174	GREATER METROPOLITAN CLEVELAND (OHIO)	1	1	1	3	1
175	MANSFIELD-MARION (OHIO)	2	2	3	3	3
176	METROPOLITAN COLUMBUS (OHIO)	1	3	1	3	1
177	NORTHWEST OHIO	2	1	3	3	3
178	NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN)	1	2	3	3	3
179	PARKERSBURG-MARIETTA (OHIO-W.VA.)	1	2	3	3	3
180	SANDUSKY (OHIO)	3	3	3	3	3
181	STEUBENVILLE-WEIRTON-WHEELING (OHIO-W.VA)	1	1	3	3	3
182	WILMINGTON-CHILLICOTHE-LOGAN (OHIO)	3	3	3	3	3
183	ZANESVILLE-CAMBRIDGE (OHIO)	2	1A	3	3	3
184	CENTRAL OKLAHOMA	1	3	3	3	1
185	NORTH CENTRAL OKLAHOMA	3	3	3	3	3
186	NORTHEASTERN OKLAHOMA	1	3	3	3	1
187	NORTHWESTERN OKLAHOMA	3	3	3	3	3
188	SOUTHEASTERN OKLAHOMA	3	3	3	3	3
189	SOUTHWESTERN OKLAHOMA	3	3	3	3	3
190	CENTRAL OREGON	2	3	3	3	3
191	EASTERN OREGON	2	3	3	3	3
192	NORTHWEST OREGON	3	3	3	3	3
193	PORTLAND (ORE-WASH)	1	1A	3	1	1
194	SOUTHWEST OREGON	2	3	3	3	3
195	CENTRAL PENNSYLVANIA	1	3	1	3	3
196	SOUTH CENTRAL PENNSYLVANIA	1	2	1	3	3

Table 3-5 (continued). PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT

		PM	SO2	NO2	CO	OX
197	SOUTHWEST PENNSYLVANIA	1	1	1	1	1
198	CAMDEN-SUMPTER (S.C.)	2	3	3	3	3
199	CHARLESTON (S.C.)	1	1	3	3	3
200	COLUMBIA (S.C.)	2	3	3	3	3
201	FLORENCE (S.C.)	3	3	3	3	3
202	GREENVILLE-SPARTANBURG (S.C.)	1	3	3	3	3
203	GREENWOOD (S.C.)	3	3	3	3	3
204	GEORGETOWN (S.C.)	2	3	3	3	3
205	BLACKHILLS-RAPID CITY (S. DAK)	3	3	3	3	3
206	SOUTH DAKOTA (REMAINDER)	3	3	3	3	3
207	EASTERN TENNESSEE-SOUTHWESTERN VIRGINIA	1	1	3	3	3
208	MIDDLE TENNESSEE	1	2	3	3	1
209	WESTERN TENNESSEE	1	3	3	3	3
210	ABILENE-WICHITA FALLS (TEX)	2	2	3	3	3
211	AMARILLO-LUBBOCK (TEX)	2	1	3	3	3
212	AUSTIN-WACO (TEX)	2	3	3	3	1
213	BROWNSVILLE-LAREDO (TEX)	1	3	3	3	3
214	CORPUS CHRISTI-VICTORIA (TEX)	1	1	1	3	1
215	METROPOLITAN DALLAS-FORT WORTH (TEX)	2	3	1	3	1
216	METROPOLITAN HOUSTON-GALVESTON (TEX)	1	1	1	3	1
217	METROPOLITAN SAN ANTONIO (TEX)	2	3	3	3	1
218	MIDLAND-ODESSA-SAN ANGELO (TEX)	2	2	3	3	3
219	UTAH (REMAINDER)	3	3	3	3	3
220	WASATCH FRONT (UTAH)	1	1	1	1	1
221	VERMONT (REMAINDER)	2	2	3	3	3
222	CENTRAL VIRGINIA	1	3	3	3	3
223	HAMPTON ROADS (VA)	1	2	1	3	1
224	NORTHEASTERN VIRGINIA	1A	3	3	3	3
225	STATE CAPITAL (VA)	1	3	1	3	1
226	VALLEY OF VIRGINIA	1	3	3	3	3
227	NORTHERN WASHINGTON	2	3	3	3	3
228	OLYMPIC-NORTHWEST WASHINGTON	2	2	3	3	3
229	PUGET SOUND (WASH)	1	1A	1	1	1
230	SOUTH CENTRAL WASHINGTON	1	3	3	3	3
231	ALLEGHENY (W. VA)	3	3	3	3	3
232	CENTRAL WEST VIRGINIA	3	3	3	3	3
233	EASTERN PANHANDLE (W. VA)	3	3	3	3	3
234	KANAWHA VALLEY (W. VA.)	1	3	3	3	3
235	NORTH CENTRAL WEST VIRGINIA	1	3	3	3	3
236	SOUTHERN WEST VIRGINIA	3	3	3	3	3
237	LAKE MICHIGAN (WISC)	2	3	3	3	3
238	NORTH CENTRAL WISCONSIN	2	3	3	3	3
239	SOUTHEASTERN WISCONSIN	1	2	1	3	1
240	SOUTHERN WISCONSIN	2	3	3	3	3
241	CASPER (WYO)	2	3	3	3	3
242	METROPOLITAN CHEYENNE (WYO)	2	3	3	3	3
243	WYOMING (REMAINDER)	3	3	3	3	3
244	PUERTO RICO	1A	1A	3	3	3
245	AMERICAN SAMOA	3	3	3	3	3

Table 3-5 (continued). PRIORITY CLASSIFICATION OF AQCR'S BY POLLUTANT

		PM	SO2	NO2	CO	OX
246	GUAM	3	2	3	3	3
247	U.S. VIRGIN ISLANDS	1A	1A	3	3	3

Table 3-6. NATIONWIDE SUMMARY OF AQCR PRIORITY CLASSIFICATIONS BY POLLUTANT

Pollutant	Priority classification				Total
	I	IA	II	III	
PM	109	11	70	57	247
SO_2	39	21	41	146	247
CO	29	--	--	218	247
NO_2	45	2	--	200	247
O_x	54	--	--	193	247

Priority III Regions, however, is a matter of important interest, because SIP requirements may have been less stringent for these Priority III Regions; thus, promulgated control strategies might not necessarily be effective in achieving NAAQS.

In similar fashion, the AQCR's that are Priority I, II, or III for sulfur dioxide are sorted according to their standing with respect to the standards for that pollutant.

Priority I or III AQCR's for carbon monoxide are listed according to their standing with respect to the 1-hour and 8-hour standards.

Priority I or III AQCR's for total oxidants meeting or exceeding the 1-hour standard are also presented.

An analysis of monitoring stations with valid data, by pollutant, showing the number whose measurements exceed primary and secondary standards, is presented in Table 3-8. It should be noted that this table reflects only those valid data available from NADB over the period 1969 to 1971. Previous discussions pertaining to the inclusion of State and local data in NADB are applicable. Accordingly, because the table does not include all operating stations, it should not be construed as representing the total number of monitoring sites for which measurements exceed air quality standards.

3.2.1 AQCR Summary

Table 3-9 presents a summary of the number of stations in each AQCR for which measurements are available through the NADB and which exceed NAAQS.* Under the annual standard headings (ANNUAL) the number of stations (#STA) includes only those reporting data that meet the validity criteria for computing representative annual statistics. Short-term standards (24-hour, 1-hour, etc.) are appraised at these stations and at any additional stations reporting at least one quarter of valid data. Therefore, the number for #STA under short-term standards may be larger than in the corresponding column under annual standards.

Stations with less than a complete year of data have been included in the appraisal of short-term standards because the data, even though fragmentary, could include values exceeding a short-term standard and should not be disregarded. The fact that data from such stations do not indicate violations of a short-term standard, however, is not conclusive evidence that the standard has been met. (The identity of individual stations that exceeded the standard and an indication of whether they reported a year's valid data are presented in Appendix G.)

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*Note that the NADB does not yet provide the basis for a truly representative overview of national air quality. Therefore, the inferences with respect to the numbers of stations meeting or not meeting standards should be interpreted with this in mind.

Table 3-7. AQCR STATUS WITH RESPECT TO STANDARDS, SUMMARIZED BY PRIORITY CLASSIFICATION

Status	Priority											
	I			II			III			Totals		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Suspended particulates												
Total AQCR's in each priority class	120	120	120	70	70	70	57	57	57	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	107	106	110	52	48	48	21	19	23	180	173	181
No. of AQCR's meeting all standards	11	7	12	17	20	18	14	12	8	42	39	38
No. of AQCR's exceeding any secondary standard or guide	96	99	98	35	28	30	7	7	15	138	134	143
No. of AQCR's exceeding any primary standard	86	88	75	15	14	17	4	4	8	105	106	100
No. of AQCR's exceeding secondary 24-hr standard	89	87	89	26	19	24	7	7	15	122	113	128
No. of AQCR's exceeding primary 24-hr standard	56	57	52	6	5	6	4	3	5	66	65	63
No. of AQCR's reporting sufficient annual data	96	96	86	41	36	31	12	11	18	149	143	135
No. of AQCR's exceeding secondary annual guide	81	89	73	28	23	22	4	5	9	113	117	104
No. of AQCR's exceeding primary annual standard	73	82	65	13	13	15	2	2	7	88	97	87
No. of AQCR's reporting only sufficient quarterly data	11	10	24	11	12	17	9	8	5	31	30	46
No. of AQCR's reporting insufficient data to compare to NAAQS	13	14	10	16	22	22	36	38	34	67	74	66
Sulfur dioxide												
Total AQCR's in each priority class	60	60	60	41	41	41	146	146	146	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	37	42	42	19	22	24	33	48	53	89	112	119
No. of AQCR's meeting all standards	23	31	26	14	16	15	32	47	51	69	94	92
No. of AQCR's exceeding any secondary standard or guide	14	11	16	5	6	9	1	1	2	20	18	27
No. of AQCR's exceeding any primary standard	12	10	15	4	5	9	1	1	2	17	16	26
No. of AQCR's exceeding secondary 24-hr standard	13	11	16	5	5	9	1	1	2	19	17	27
No. of AQCR's exceeding primary 24-hr standard	11	9	15	3	3	9	1	1	2	15	13	26
No. of AQCR's exceeding secondary 3-hr standard	6	5	6	1	0	1	0	0	0	7	5	7

Table 3-7 (continued). AQCR STATUS WITH RESPECT TO STANDARDS, SUMMARIZED BY PRIORITY CLASSIFICATION

Status	Priority											
	I			II			III			Totals		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Sulfur dioxide (continued)												
No. of AQCR's reporting sufficient annual data	30	32	28	18	16	17	27	22	20	75	70	65
No. of AQCR's exceeding secondary annual guide	10	7	7	2	3	3	0	0	0	12	10	10
No. of AQCR's exceeding primary annual standard	6	5	3	1	2	0	0	0	0	7	7	3
No. of AQCR's reporting only sufficient quarterly data	7	10	14	1	6	7	6	26	33	14	42	54
No. of AQCR's reporting insufficient data to compare to NAAQS	23	18	18	22	19	17	113	98	93	158	135	128
Carbon monoxide												
Total AQCR's in each priority class	29	29	29				218	218	218	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	11	11	13				5	3	8	16	14	21
No. of AQCR's exceeding any primary standard	11	11	13				3	3	8	14	14	21
Oxidants												
Total AQCR's in each priority class	54	54	54				193	193	193	247	247	247
No. of AQCR's reporting sufficient quarterly or annual data	9	13	15				0	0	0	9	13	15
No. of AQCR's exceeding any primary standard	9	12	15				0	0	0	9	12	15

Table 3-8. STANDARDS STATUS OF MONITORING STATIONS BY POLLUTANT, 1969-1971

	Number of stations		
	1969	1970	1971
Suspended particulates			
Total stations with year's valid data[a]	667	644	640
Exceeding annual secondary standard[b]	638	459	426
Exceeding annual primary standard	335	319	275
Total stations with 1 or more valid quarters	1095	1002	1313
Exceeding 24-hr secondary standard	594	530	628
Exceeding 24-hr primary standard	184	161	140
Sulfur dioxide			
Total stations with year's valid data[a]	178	155	153
Exceeding annual primary standard	24	19	4
Total stations with 1 or more quarter's valid data	234	276	409
Exceeding 24-hr secondary standard[b]	72	52	60
Exceeding 24-hr primary standard	54	34	17
Carbon monoxide			
Total stations with 1 or more quarter's valid data[a]	35	48	58
Exceeding 1-hr standard	3	10	7
Exceeding 8-hr standard	29	39	53
Total oxidants or ozone			
Total stations with 1 or more quarter's valid data[a]	38	45	50
Exceeding 1-hr standard	37	43	50

[a] Sufficient data available from which statistics can be calculated.

[b] These are considered to be air quality guides rather than standards.

In Table 3-9, the columns under SULFUR DIOXIDE parallel those for suspended particulates, with the addition of a column for the number of stations at which the 3-hour standard was exceeded. This column can apply only to instrument methods producing 1-hour data from which the running 3-hour averages can be calculated. All instrument methods, continuous and integrating (24-hour), are combined under the #STA columns, implying a comparability among the SO_2 measurement methods that has not yet been rigorously substantiated. Appendix G, which summarizes the status at each individual station, separates the stations by instrument method.

Conversely, because CARBON MONOXIDE and OXIDANTS have only short-term standards, all stations with at least one quarter's valid data are counted.

3.2.2 Station Summary

A detailed summary listing individual stations and their standing with respect to NAAQS is presented in Appendix G. A separate table is presented for each pollutant measurement method. There are nine tables in all: four for SO_2, three for oxidants, and one each for TSP and CO. The station listings are ordered consecutively by AQCR. In the case of Interstate Regions, the listing of stations is also subdivided by State within each AQCR.

Table 3-9. SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 -	ANNUAL #> PRI 75 -	24-HOUR #STA (2)	24-HOUR #> SEC 150 -	24-HOUR #> PRI 260 -	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
301 ALABAMA AND TOMBIGBEE RIVERS(ALA)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
302 COLUMBUS-PHENIX CITY (ALA-GA)	69	1	3	1	1	3	0	0	3	1	0	0	2	0	0	0	3	0	0	0	3	0	0
	70		3	1	1	3	1	0		2	0	0	2	0	0	0		0	0	0		0	0
	71		2	1	0	2	0	0		2	0	0	2	0	0	0		0	0	0		0	0
303 EAST ALABAMA	69	1	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
304 METROPOLITAN BIRMINGHAM (ALA)	69	1	0	0	0	1	1	1	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		0	0	0	7	5	3		0	0	0	1	0	0	0		0	0	0		0	0
	71		6	5	5	8	7	6		1	0	0	1	0	0	0		0	0	0		0	0
305 MOBILE-PENSACOLA-PANAMA CITY-S.MISS.(ALA-FLA-MIS	69	1	2	2	2	4	3	0	1	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		0	0	0	3	1	0		0	0	0	3	0	0	0		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	3	0	0	0		0	0	0		0	0
306 SOUTHEAST ALABAMA	69	2	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
307 TENN. RIVER VALLEY-CUMBERLAND MTS (ALA-TENN)	69	1	2	0	0	2	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	1	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	5	0	0		0	0	0	0	0	0	0		0	0	0		0	0
308 COOK INLET (ALSK)	69	1	1	1	1	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
309 NORTHERN ALASKA	69	1	1	1	1	1	1	1	3	1	0	0	1	0	0	0	1	0	0	0	3	0	0
	70		0	0	0	1	1	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
310 SOUTH CENTRAL ALASKA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
311 SOUTHEASTERN ALASKA	69	3	0	0	0	0	0	0	14	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

(1) Number of stations with valid annual summary statistics

(2) All stations with at least one quarter's valid summary statistics

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	JG/CJ.M: P.P.M:	PRIORITY	#STA (1)	#> SEC 60 -	#> PRI 75 -	#STA (2)	#> SEC 150 -	#> PRI 260 -	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
012 ARIZONA-NEW MEXICO SOUTHERN BORDER (ARIZ.-N. MEX	69	1A	0	0	0	0	0	0	1A	0	0	0	1	1	1	1	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		1	1	0	2	2	2	2		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	1	1	1	1		0	0	0		0	0
013 CLARK-MOHAVE (ARIZ-NEV)	69	1	2	2	2	2	2	0	1A	0	0	0	0	0	0	0	1	0	0	0	1	0	0
	70		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	1	0	0	0		0	0	0		0	0
014 FOUR CORNERS (ARIZ-COLO-N.M.-UTAH)	69	1A	3	1	1	3	1	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		4	1	0	5	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		4	1	0	20	4	1		0	0	0	0	0	0	0		0	0	0		0	0
015 PHOENIX-TUCSON (ARIZ)	69	1	4	3	3	4	2	0	1	2	0	0	5	2	2	3	1	1	1	1	1	1	1
	70		2	1	1	3	2	0		1	0	0	4	2	2	2		0	0	0		0	0
	71		3	3	3	9	6	1		1	0	0	5	3	3	3		0	0	0		0	0
016 CENTRAL ARKANSAS	69	2	2	2	2	2	1	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
017 METROPOLITAN FORT SMITH (ARK-OKLA)	69	2	2	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	4	2	1		1	0	0	1	0	0	0		0	0	0		0	0
018 METROPOLITAN MEMPHIS (ARK-MISS-TENN)	69	1	3	3	0	9	6	1	3	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		2	2	2	2	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		2	1	1	2	1	0		1	0	0	1	0	0	0		0	0	0		0	0
019 MONROE-EL DORADO (ARK-LA)	69	2	2	1	1	2	1	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
020 NORTHEAST ARKANSAS	69	3	0	0	0	1	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
021 NORTHWEST ARKANSAS	69	3	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
022 SHREVEPORT-TEXARKANA-TYLER (ARK-LA-OKLA-TEX)	69	2	4	3	0	6	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		3	3	1	7	5	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	6	2	1		1	0	0	1	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES ANNUAL #STA (1)	ANNUAL #> SEC 60	ANNUAL #> PRI 75	24-HOUR #STA (2)	24-HOUR #> SEC 150	24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	SULFUR DIOXIDE ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
023 GREAT BASIN VALLEY (CALIF)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
024 METROPOLITAN LOS ANGELES (CALIF)	69	1	16	16	14	17	16	7	2	6	0	0	7	1	0	0	1	1	0	1	1	5	5
	70		11	11	11	11	11	4		15	2	0	23	10	5	0		11	5	10		15	15
	71		9	9	9	11	9	1		13	1	0	23	6	2	0		11	2	11		16	16
025 NORTH CENTRAL COAST (CALIF)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	2	0	0	1	4	3
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		3	2
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		3	3
026 NORTH COAST (CALIF)	69	2	1	0	0	1	0	0	3	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
027 NORTHEAST PLATEAU (CALIF)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
028 SACRAMENTO VALLEY (CALIF)	69	2	2	0	0	2	0	0	3	0	0	0	1	0	0	0	1	1	1	1	1	2	2
	70		1	0	0	1	0	0		0	0	0	1	0	0	0		2	0	2		3	3
	71		1	0	0	1	0	0		0	0	0	1	0	0	0		2	1	2		3	3
029 SAN DIEGO (CALIF)	69	2	2	2	0	2	1	0	3	1	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		2	2	1	2	2	0		1	0	0	1	0	0	0		0	0	0		1	1
	71		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		1	1
030 SAN FRANCISCO BAY AREA (CALIF)	69	2	4	3	2	5	0	0	2	3	0	0	4	0	0	0	1	11	0	8	1	16	16
	70		2	1	0	5	0	0		2	0	0	5	0	0	0		9	0	5		11	11
	71		3	1	1	4	1	0		2	0	0	4	1	1	0		9	0	6		10	10
031 SAN JOAQUIN VALLEY (CALIF)	69	1	1	1	1	1	1	0	3	0	0	0	1	0	0	0	1	5	0	5	1	4	4
	70		1	1	1	1	1	0		0	0	0	1	0	0	0		4	0	1		4	4
	71		0	0	0	1	0	0		0	0	0	1	0	0	0		3	0	3		3	3
032 SOUTH CENTRAL COAST (CALIF)	69	3	1	1	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
033 SOUTHEAST DESERT (CALIF)	69	1	1	1	1	1	1	0	3	1	0	0	2	0	0	0	3	2	0	2	1	3	3
	70		0	0	0	0	0	0		0	0	0	1	0	0	0		2	0	2		1	1
	71		0	0	0	0	0	0		0	0	0	1	0	0	0		2	0	2		2	2

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M: P.P.M:	PRIORITY	#STA (1)	#> SEC 60 -	#> PRI 75 -	#STA (2)	#> SEC 150 -	#> PRI 260 -	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
034 COMANCHE (COLO)	69	3	2	1	0	2	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	0	0	2	2	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	0	0	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
035 GRAND MESA (COLO)	69	3	4	4	3	11	7	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		7	5	3	7	6	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		6	4	3	8	7	3		0	0	0	0	0	0	0		0	0	0		0	0
036 METROPOLITAN DENVER (COLO)	69	1	21	19	15	21	18	8	3	2	0	0	4	2	1	0	1	1	1	1	1	0	0
	70		23	16	13	20	17	5		3	0	0	3	1	1	0		1	1	1		1	1
	71		23	21	13	24	19	9		0	0	0	2	1	1	0		1	1	1		1	1
037 PAWNEE (COLO)	69	1	7	6	5	9	7	3	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		9	9	6	13	9	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		10	9	9	11	13	4		0	0	0	0	0	0	0		0	0	0		0	0
038 SAN ISABEL (COLO)	69	1	5	4	4	5	5	2	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		7	6	5	7	7	3		0	0	0	0	0	0	0		0	0	0		0	0
	71		7	6	4	7	5	3		0	0	0	0	0	0	0		0	0	0		0	0
039 SAN LUIS (COLO)	69	3	1	1	1	1	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	2	1	4	2	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		3	2	1	6	2	0		0	0	0	0	0	0	0		0	0	0		0	0
040 YAMPA (COLO)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		4	3	1	4	3	1		0	0	0	0	0	0	0		0	0	0		0	0
041 EASTERN CONNECTICUT	69	2	1	1	0	3	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
042 HARTFORD-NEW HAVEN-SPRINGFIELD (CONN-MASS)	69	1	9	8	6	29	11	0	1	3	1	1	6	3	2	2	1	0	0	0	1	0	0
	70		5	5	4	8	5	0		3	0	0	3	0	0	0		0	0	0		0	0
	71		3	3	2	11	5	0		2	0	0	2	0	0	0		0	0	0		0	0
043 NEW JERSEY-NEW YORK-CONNECTICUT	69	1	37	27	15	51	17	5	1	6	4	3	10	5	5	2	1	4	0	4	1	2	2
	70		42	31	22	50	32	3		7	6	3	16	10	7	1		7	0	6		2	2
	71		41	29	15	49	23	3		10	3	1	20	7	7	0		6	0	6		2	2
044 NORTHWESTERN CONNECTICUT	69	3	0	0	0	3	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M P.P.M	SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
		PRIORITY	#STA (1)	#> SEC 60	#> PRI 75	#STA (2)	#> SEC 150	#> PRI 260	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
045 METROPOLITAN PHILADELPHIA (DEL-N.J.-PA)	69	1	12	11	5	23	8	3	1	3	3	2	16	9	8	1	1	1	0	1	1	1	1
	70		9	8	5	11	6	1		10	5	3	15	5	5	1		6	2	6		1	1
	71		4	4	2	11	5	1		9	3	0	16	6	5	0		6	1	6		2	2
046 SOUTHERN DELAWARE	69	3	0	0	0	1	0	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
047 NATIONAL CAPITAL (D.C.-MD-VA)	69	1	1	1	0	29	7	1	1	2	0	0	3	1	1	0	1	1	0	1	1	0	0
	70		13	9	2	28	10	2		1	0	0	3	1	1	0		1	1	1		1	1
	71		10	4	1	45	11	0		1	1	0	12	2	2	1		2	1	2		3	3
048 CENTRAL FLORIDA	69	2	0	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
049 JACKSONVILLE-BRUNSWICK (FLA-GA)	69	1	10	5	4	12	4	3	2	10	0	0	10	0	0	0	3	0	0	0	1	0	0
	70		11	5	3	11	5	3		9	0	0	10	2	0	0		0	0	0		0	0
	71		10	8	4	10	7	3		3	0	0	12	2	2	1		0	0	0		0	0
050 SOUTHEAST FLORIDA	69	2	3	3	0	3	0	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
051 SOUTHWEST FLORIDA	69	3	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
052 WEST CENTRAL FLORIDA	69	1	7	2	0	8	0	0	1	2	0	0	2	0	0	0	3	1	0	0	3	0	0
	70		3	1	1	3	0	0		2	0	0	3	0	0	0		0	0	0		0	0
	71		2	0	0	3	1	0		3	0	0	3	0	0	0		0	0	0		0	0
053 AUGUSTA-AIKEN (GA-S.C.)	69	1	1	1	1	1	1	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
054 CENTRAL GEORGIA	69	1	2	1	1	2	1	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
055 CHATTANOOGA (GA-TENN)	69	1	2	2	2	7	5	3	2	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	5	4	3		1	0	0	1	0	0	0		0	0	0		0	0
	71		3	2	2	9	5	2		0	0	0	1	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
		PRIORITY	#STA	#> SEC	#> PRI	#STA	#> SEC	#> PRI	PRIORITY	#STA	#> SEC	#> PRI	#STA	#> SEC	#> PRI	#> STD	PRIORITY	#STA	#> STD	#> STD	PRIORITY	#STA	#> STD
	UG/CU.M:		(1)	60	75	(2)	150	260		(1)	60	80	(2)	260	365	1300		(2)	40*	10*		(2)	160
	P.P.M:			–	–		–	–			.02	.03		.10	.14	.50			35	9			.08
056 METROPOLITAN ATLANTA (GA)	69	1	2	2	2	2	0	0	1	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
057 NORTHEAST GEORGIA	69	2	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
058 SAVANNAH-BEAUFORT (GA-S.C.)	69	1	2	2	2	2	2	2	1	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	1	2	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
059 SOUTHWEST GEORGIA	69	2	1	1	1	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
060 HAWAII	69	2	1	0	0	3	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	0	0		0	0	0	2	0	0	0		0	0	0		0	0
	71		2	0	0	4	0	0		0	0	0	2	0	0	0		0	0	0		0	0
061 EASTERN IDAHO	69	1	1	0	0	3	2	1	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	6	4	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	0	0	11	7	1		0	0	0	0	0	0	0		0	0	0		0	0
062 EASTERN WASHINGTON-NORTHERN IDAHO (IDAHO-WASHING	69	1	1	1	0	1	1	0	1A	0	0	0	0	0	0	0	1	0	0	0	3	0	0
	70		1	1	1	4	4	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		6	6	5	21	17	4		0	0	0	1	0	0	0		0	0	0		0	0
063 IDAHO (REMAINDER)	69	1	1	1	1	1	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	1	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	2	2	1		0	0	0	0	0	0	0		0	0	0		0	0
064 METROPOLITAN BOISE (IDAHO)	69	1	3	3	3	4	4	1	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		3	3	1	5	3	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		4	4	3	5	4	1		0	0	0	0	0	0	0		0	0	0		0	0
065 BURLINGTON-KEOKUK (ILL-IOWA)	69	1	1	1	1	6	5	1	1	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	1	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	2	2	1		0	0	0	1	0	0	0		0	0	0		0	0
066 EAST CENTRAL ILLINOIS	69	3	0	0	0	1	1	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60	ANNUAL #> PRI 75	24-HOUR #STA (2)	24-HOUR #> SEC 150	24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
367 METROPOLITAN CHICAGO (ILL-IND)	69	1	69	69	61	91	85	61	1	37	22	15	41	24	15	8	1	1	0	1	1	0	0
	70		24	24	24	44	44	20		24	14	9	32	11	6	0		1	0	1		1	1
	71		27	9	7	41	36	9		24	4	0	36	2	1	0		1	0	1		1	1
368 METROPOLITAN DUBUQUE (ILL-IOWA-WISC)	69	1	3	3	2	3	2	2	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	1	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
369 METROPOLITAN QUAD CITIES (ILL-IOWA)	69	1	0	0	0	3	2	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		3	3	1	4	2	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		3	2	2	3	2	1		0	0	0	0	0	0	0		0	0	0		0	0
370 METROPOLITAN ST. LOUIS (ILL-MO)	69	1	7	7	7	25	23	10	1	2	2	0	4	2	2	0	1	1	0	1	1	0	0
	70		9	8	6	15	12	6		1	0	0	3	1	1	0		1	0	1		1	0
	71		2	2	2	12	6	1		3	0	0	3	1	1	0		1	0	1		1	1
371 NORTH CENTRAL ILLINOIS	69	2	0	0	0	3	2	1	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
372 PADUCAH-CAIRO (ILL-KY)	69	1	0	0	0	15	9	1	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	13	4	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		5	4	2	7	7	0		2	0	0	6	1	1	0		0	0	0		0	0
373 ROCKFORD-JANESVILLE-BELOIT (ILL-WISC)	69	2	2	2	2	5	2	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	4	3	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		3	2	1	4	2	1		0	0	0	1	0	0	0		0	0	0		0	0
374 SOUTHEAST ILLINOIS	69	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
375 WEST CENTRAL ILLINOIS	69	1	1	1	1	3	1	0	15	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	1	1	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
376 EAST CENTRAL INDIANA	69	2	0	0	0	2	1	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	4	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
377 EVANSVILLE-OWENSBORO-HENDERSON (IND-KY)	69	1	4	4	4	4	4	2	2	15	0	0	15	14	13	6	3	0		0	3	0	0
	70		2	1	1	6	2	0		1	0	0	1	0	0	0				0		0	0
	71		9	8	5	11	7	2		3	0	0	10	0	0	0				0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES ANNUAL #STA (1)	SUSPENDED PARTICULATES ANNUAL #> SEC 60	SUSPENDED PARTICULATES ANNUAL #> PRI 75	SUSPENDED PARTICULATES 24-HOUR #STA (2)	SUSPENDED PARTICULATES 24-HOUR #> SEC 150	SUSPENDED PARTICULATES 24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	SULFUR DIOXIDE ANNUAL #STA (1)	SULFUR DIOXIDE ANNUAL #> SEC 60 .02	SULFUR DIOXIDE ANNUAL #> PRI 80 .03	SULFUR DIOXIDE 24-HOUR #STA (2)	SULFUR DIOXIDE 24-HOUR #> SEC 260 .10	SULFUR DIOXIDE 24-HOUR #> PRI 365 .14	SULFUR DIOXIDE 3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	CARBON MONOXIDE #STA (2)	CARBON MONOXIDE 1-HR #> STD 40* 35	CARBON MONOXIDE 8-HR #> STD 10* 9	OXIDANTS PRIORITY	OXIDANTS #STA (2)	OXIDANTS 1-HR #> STD 160 .08
078 LOUISVILLE (IND-KY)	69	1	4	4	4	4	3	0	1	2	0	0	2	0	0	0	3	0	0	0	1	0	0
	70		1	1	1	4	3	1		1	0	0	2	0	0	0		0	0	0		0	0
	71		12	11	13	16	11	0		1	0	0	6	4	4	0		0	0	0		0	0
079 METROPOLITAN CINCINNATI (IND-KY-OHIO)	69	1	6	5	5	5	6	1	2	4	0	0	6	2	1	0	3	1	0	1	1	0	0
	70		11	11	9	17	9	3		3	0	0	4	1	1	0		1	0	1		0	0
	71		20	17	13	19	15	2		4	0	0	9	2	2	0		1	0	1		1	1
080 METROPOLITAN INDIANAPOLIS (IND)	69	1	12	12	9	18	16	5	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		2	1	1	2	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		16	14	9	16	12	1		1	0	0	1	0	0	0		0	0	0		0	0
081 NORTHEAST INDIANA	69	2	2	2	2	2	2	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
082 SOUTH BEND-ELKHART-BENTON HARBOR (IND.-MICH)	69	1	2	2	0	2	1	0	1A	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		3	2	2	5	2	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	0	18	1	0		0	0	0	0	0	0	0		0	0	0		0	0
083 SOUTHERN INDIANA	69	1A	1	0	0	1	0	0	1A	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
084 WABASH VALLEY (IND)	69	1	4	2	2	4	2	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		8	6	5	13	6	3		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	12	9	0		0	0	0	0	0	0	0		0	0	0		0	0
085 METROPOLITAN OMAHA-COUNCIL BLUFFS (IOWA-NEB)	69	1	2	2	2	2	2	2	2	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	4	4	2		0	0	0	1	0	0	0		0	0	0		0	0
	71		2	2	2	14	9	2		1	0	0	1	0	0	0		0	0	0		0	0
086 METROPOLITAN SIOUX CITY (IOWA-NEB-S.D.)	69	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
087 METROPOLITAN SIOUX FALLS (IOWA-S.D.)	69	2	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
088 NORTHEAST IOWA	69	1	0	0	0	1	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	2	2	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	3	1	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60	ANNUAL #> PRI 75	24-HOUR #STA (2)	24-HOUR #> SEC 150	24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40M 35	8-HR #> STD 10M 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
389 NORTH CENTRAL IOWA	69	IA	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	1	1	1		0	0	0	0	0	0	0		0	0	0		0	0
390 NORTHWEST IOWA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
391 SOUTHEAST IOWA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
392 SOUTH CENTRAL IOWA	69	[illegible]	2	2	2	4	4	0	3	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	1	1	1	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
393 SOUTHWEST IOWA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
394 METROPOLITAN KANSAS CITY (KAN-MO)	69	1	4	4	4	4	4	2	3	1	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		3	3	3	3	3	1		1	0	0	3	0	0	0		0	0	0		0	0
	71		2	2	2	8	5	0		2	0	0	5	1	1	0		0	0	0		0	0
395 NORTHEAST KANSAS	69	1	1	0	0	4	5	1	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	1	5	3	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		4	4	3	5	5	2		0	0	0	1	0	0	0		0	0	0		0	0
396 NORTH CENTRAL KANSAS	69	1	0	0	0	4	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		4	3	2	4	3	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		3	2	1	4	3	2		0	0	0	0	0	0	0		0	0	0		0	0
397 NORTHWEST KANSAS	69	1	0	0	0	2	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		3	2	1	3	3	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		3	2	1	4	2	0		0	0	0	0	0	0	0		0	0	0		0	0
398 SOUTHEAST KANSAS	69	3	0	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	1	0	4	1	0		0	0	0	0	0	0	0		0	0	0		0	0
399 SOUTH CENTRAL KANSAS	69	1	2	0	0	8	5	2	3	2	0	0	2	0	0	0	3	0	0	0	1	0	0
	70		8	7	7	6	7	3		2	0	0	2	0	0	0		0	0	0		0	0
	71		7	5	4	7	4	1		[illegible]	0	0	3	0	0	0		1	0	1		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 -	ANNUAL #> PRI 75 -	24-HOUR #STA (2)	24-HOUR #> SEC 150 -	24-HOUR #> PRI 260 -	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
100 SOUTHWEST KANSAS	69	1	0	0	0	2	2	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	2	1	2	2	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	1	1	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
101 APPALACHIAN (KY)	69	2	0	0	0	3	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		3	2	2	4	3	0		0	0	0	0	0	0	0		0	0	0		0	0
102 BLUEGRASS (KY)	69	2	2	0	0	3	0	0	3	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	3	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		3	1	0	4	0	0		0	0	0	1	0	0	0		0	0	0		0	0
103 HUNTINGTON-ASHLAND-PORTSMOUTH-IRONTON (KY-OH-W.V	69	1	5	5	3	5	4	4	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	4	1	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		7	6	4	11	6	2		2	0	0	2	0	0	0		0	0	0		0	0
104 NORTH CENTRAL KENTUCKY	69	2	0	0	0	1	1	2	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
105 SOUTH CENTRAL KENTUCKY	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
106 SOUTHERN LOUISIANA-SOUTHEAST TEXAS (LOUISIANA-TE	69	2	5	4	0	7	0	0	1	2	0	0	3	0	0	0	3	0	0	0	1	0	0
	70		4	4	1	6	0	0		3	0	0	4	0	0	0		0	0	0		0	0
	71		2	2	0	6	0	0		2	0	0	4	0	0	0		0	0	0		0	0
107 ANDROSCOGGIN VALLEY (ME-N.H.)	69	1A	1	0	0	1	0	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
108 AROOSTOOK (ME)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
109 DOWN EAST (ME)	69	1A	1	0	0	1	0	0	1A	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
110 METROPOLITAN PORTLAND (ME)	69	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M. P.P.M.	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES #STA (1)	ANNUAL > SEC 60	ANNUAL > PRI 75	#STA (2)	24-HOUR > SEC 150	24-HOUR > PRI 260	SULFUR DIOXIDE PRIORITY	#STA (1)	ANNUAL > SEC 60 .02	ANNUAL > PRI 80 .03	#STA (2)	24-HOUR > SEC 260 .10	24-HOUR > PRI 365 .14	3-HR > STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR > STD 40* 35	8-HR > STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR > STD 160 .08
111 NORTHWEST MAINE	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
112 CENTRAL MARYLAND	69	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
113 CUMBERLAND-KEYSER (MD-W. VA.)	69	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	2	2	1	0		0	0	0		0	0
114 EASTERN SHORE (MD)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
115 METROPOLITAN BALTIMORE (MD)	69	1	2	2	2	2	2	0	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		1	1	1	1	1	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	1		1	0	0	2	1	1	0		0	0	0		0	0
116 SOUTHERN MARYLAND	69	3	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
117 BERKSHIRE (MASS)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	1	0	6	2	0		0	0	0	0	0	0	0		0	0	0		0	0
118 CENTRAL MASSACHUSETTS	69	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	2	2	0		0	0	0	0	0	0	0		0	0	0		0	0
119 METROPOLITAN BOSTON (MASS.)	69	1	3	3	3	4	3	0	1	1	1	0	2	1	0	0	1	0	0	0	1	0	0
	70		2	2	2	6	4	1		1	0	0	3	0	0	0		0	0	0		0	0
	71		7	6	4	21	8	2		1	0	0	4	1	1	1		1	1	1		0	0
120 METROPOLITAN PROVIDENCE (MASS-R.I.)	69	1	4	2	1	5	0	0	1	1	1	1	1	1	0	0	3	0	0	0	3	0	0
	70		4	2	1	9	0	0		1	1	0	3	1	0	0		0	0	0		0	0
	71		20	8	3	27	7	0		2	1	0	16	2	1	0		0	0	0		0	0
121 MERRIMACK VALLEY-SOUTHERN NEW HAMPSHIRE (MASS-N.	69	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	0	0	5	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	6	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
		PRIORITY	#STA (1)	#> SEC 60 -	#> PRI 75 -	#STA (2)	#> SEC 150 -	#> PRI 260 -	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
122 CENTRAL MICHIGAN	69	2	15	12	9	22	13	3	3	3	0	0	3	0	0	0	3	0	0	0	3	0	0
	70		19	15	13	23	9	2		3	0	0	3	0	0	0		0	0	0		0	0
	71		13	13	4	18	4	0		2	0	0	5	0	0	0		0	0	0		0	0
123 METROPOLITAN DETROIT-PORT HURON (MICH)	69	1	10	10	8	16	12	0	1	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		9	8	6	13	10	1		1	0	0	2	0	0	0		0	0	0		0	0
	71		22	21	18	43	28	8		1	0	0	2	0	0	0		0	0	0		0	0
124 METROPOLITAN TOLEDO (MICH-OHIO)	69	1	13	10	5	12	9	2	1	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		10	10	9	15	10	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		8	8	6	16	5	0		1	0	0	5	4	4	1		2	0	2		0	0
125 SOUTH CENTRAL MICHIGAN	69	2	4	3	0	5	4	0	2	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		3	2	2	4	1	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		4	3	1	4	1	0		0	0	0	1	0	0	0		0	0	0		0	0
126 UPPER MICHIGAN	69	3	2	0	0	4	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		6	0	0	6	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		5	0	0	9	3	0		0	0	0	1	0	0	0		0	0	0		0	0
127 CENTRAL MINNESOTA	69	2	0	0	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
128 SOUTHEAST MINNESOTA-LA CROSSE (MINN-WISC)	69	2	1	0	0	1	0	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	0	0	5	0	0		0	0	0	0	0	0	0		0	0	0		0	0
129 DULUTH-SUPERIOR (MINN-WISC)	69	1	3	3	0	8	5	3	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	2	1	3	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	6	5	1		0	0	0	1	0	0	0		0	0	0		0	0
130 METROPOLITAN FARGO-MOORHEAD (MINN-N.D.)	69	2	2	1	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	1	0	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
131 MINNEAPOLIS-ST. PAUL (MINN)	69	1	13	11	2	14	6	2	1	1	0	0	1	0	0	0	1	0	0	0	3	0	0
	70		2	2	1	2	2	0		1	0	0	2	0	0	0		0	0	0		0	0
	71		1	1	0	2	0	0		1	0	0	2	0	0	0		0	0	0		0	0
132 NORTHWEST MINNESOTA	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 -	ANNUAL #> PRI 75 -	24-HOUR #STA (2)	24-HOUR #> SEC 150 -	24-HOUR #> PRI 260 -	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
133 SOUTHWEST MINNESOTA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
134 MISSISSIPPI DELTA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
135 NORTHEAST MISSISSIPPI	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
136 NORTHERN PIEDMONT (N.C.)	69	1	3	3	3	3	3	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	2	2	0		1	0	0	2	0	0	0		0	0	0		0	0
	71		1	1	1	8	4	0		2	0	0	7	0	0	0		0	0	0		0	0
137 NORTHERN MISSOURI	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
138 SOUTHEAST MISSOURI	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
139 SOUTHWEST MISSOURI	69	1	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
140 BILLINGS (MONT)	69	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
141 GREAT FALLS (MONT)	69	3	1	0	0	1	0	0	1A	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
142 HELENA (MONT)	69	1A	1	0	0	1	0	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
143 MILES CITY (MONT)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M P.P.M	PRIORITY	#STA (1)	#> SEC 60 -	#> PRI 75 -	#STA (2)	#> SEC 150 -	#> PRI 260 -	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40 35	#> STD 10 9	PRIORITY	#STA (2)	#> STD 160 .08
144 MISSOULA (MONT)	69	1	0	0	0	1	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
145 LINCOLN-BEATRICE-FAIRBURY (NEB)	69	2	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		2	1	0	3	0	0		0	0	0	1	0	0	0		0	0	0		0	0
146 NEBRASKA (REMAINDER)	69	3	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		8	7	3	9	4	0		0	0	0	1	0	0	0		0	0	0		0	0
147 NEVADA (REMAINDER)	69	1A	1	0	0	1	0	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
148 NORTHWEST NEVADA	69	1	2	2	2	2	2	2	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	0		0	0	0	0	0	0	0		0	0	0		0	0
149 CENTRAL NEW HAMPSHIRE	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
150 NEW JERSEY (REMAINDER)	69	3	0	0	0	0	0	0	1A	0	0	0	0	0	0	0	1	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		1	1	1		0	0
	71		0	0	0	0	0	0		1	0	0	1	1	0	0		1	0	1		0	0
151 NORTHEAST PENNSYLVANIA-UPPER DEL. VAL. (PENN-N.J	69	1	5	5	5	5	5	1	2	2	0	0	2	0	0	0	3	0	0	0	3	0	0
	70		4	4	4	5	5	1		2	0	0	4	1	1	0		1	0	1		0	0
	71		4	4	4	5	4	1		1	0	0	3	0	0	0		0	0	0		0	0
152 ALBUQUERQUE-MID RIO GRANDE (N. MEX)	69	1	10	6	3	10	7	1	3	1	0	0	1	0	0	0	3	1	0	1	1	0	0
	70		13	7	7	11	9	7		1	0	0	1	0	0	0		0	0	0		0	0
	71		9	7	7	13	8	0		0	0	0	1	0	0	0		1	0	1		0	0
153 EL PASO-LAS CRUCES-ALAMAGORDO (N. MEX-TEX)	69	1	0	0	0	3	3	0	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0
	70		4	2	2	4	2	2		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	6	4	2		0	0	0	1	0	0	0		0	0	0		0	0
154 NORTHEAST PLAINS (N. MEX)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M:	PRIORITY	#STA (1)	#> SEC 60	#> PRI 75	#STA (2)	#> SEC 150	#> PRI 260	PRIORITY	#STA (1)	#> SEC 60	#> PRI 80	#STA (2)	#> SEC 260	#> PRI 365	#> STD 1300	PRIORITY	#STA (2)	#> STD 40*	#> STD 10*	PRIORITY	#STA (2)	#> STD 160
	P.P.M:			-	-		-	-			.02	.03		.10	.14	.50			35	9			.08
155 PECOS-PERMIAN BASIN (N. MEX)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	0	0	0	0		0	0	0		0	0
156 SOUTHWESTERN MOUNTAINS-AUGUSTINE PLAINS (N. MEX)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
157 UPPER RIO GRANDE VALLEY (N. MEX)	69	3	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	3	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	6	0	0		0	0	0	0	0	0	0		0	0	0		0	0
158 CENTRAL NEW YORK	69	1	17	11	10	27	14	2	2	2	0	0	2	0	0	0	1	0	0	0	1	0	0
	70		31	14	10	38	15	1		0	0	0	3	0	0	0		0	0	0		0	0
	71		33	18	9	38	20	4		1	0	0	4	2	2	0		1	0	1		0	0
159 CHAMPLAIN VALLEY (N.Y.-VT)	69	2	5	0	0	5	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		4	0	0	5	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		4	0	0	6	0	0		0	0	0	0	0	0	0		0	0	0		0	0
160 GENESEE-FINGER LAKES (N.Y.)	69	2	7	5	4	9	6	0	2	1	1	0	4	1	1	0	3	0	0	0	1	0	0
	70		9	4	3	11	3	0		4	2	1	6	1	0	0		0	0	0		0	0
	71		14	5	3	15	4	0		6	1	0	8	1	1	0		1	0	1		0	0
161 HUDSON VALLEY (N.Y.)	69	1	27	13	4	28	9	1	2	3	2	2	3	1	0	0	3	0	0	0	3	0	0
	70		26	14	4	29	11	1		3	2	2	3	0	0	0		0	0	0		0	0
	71		24	14	6	31	9	3		3	1	0	6	3	2	0		3	0	1		0	0
162 NIAGARA FRONTIER (N.Y.)	69	1	24	18	15	28	20	12	1	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		27	21	17	29	19	7		1	1	1	4	2	1	0		0	0	0		0	0
	71		30	22	17	30	38	7		6	4	3	15	7	4	1		2	0	2		0	0
163 SOUTHERN TIER EAST (N.Y.)	69	2	6	4	1	7	3	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		5	2	1	6	2	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		5	5	1	7	5	0		0	0	0	0	0	0	0		0	0	0		0	0
164 SOUTHERN TIER WEST (N.Y.)	69	2	5	0	0	14	1	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		13	4	0	13	3	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		10	4	1	14	4	0		0	0	0	0	0	0	0		0	0	0		0	0
165 EASTERN MOUNTAIN (N.C.)	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	15	2	0		0	0	0	8	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES ANNUAL #STA (1)	SUSPENDED PARTICULATES ANNUAL #> SEC 60	SUSPENDED PARTICULATES ANNUAL #> PRI 75	SUSPENDED PARTICULATES 24-HOUR #STA (2)	SUSPENDED PARTICULATES 24-HOUR #> SEC 150	SUSPENDED PARTICULATES 24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	SULFUR DIOXIDE ANNUAL #STA (1)	SULFUR DIOXIDE ANNUAL #> SEC 60 .02	SULFUR DIOXIDE ANNUAL #> PRI 80 .03	SULFUR DIOXIDE 24-HOUR #STA (2)	SULFUR DIOXIDE 24-HOUR #> SEC 260 .10	SULFUR DIOXIDE 24-HOUR #> PRI 365 .14	SULFUR DIOXIDE 3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	CARBON MONOXIDE #STA (2)	CARBON MONOXIDE 1-HR #> STD 40* 35	CARBON MONOXIDE 8-HR #> STD 10* 9	OXIDANTS PRIORITY	OXIDANTS #STA (2)	OXIDANTS 1-HR #> STD 160 .08
166 EASTERN PIEDMONT (N.C.)	69	1	2	2	2	2	0	0	3	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	3	0	0		0	0	0	3	0	0	0		0	0	0		0	0
167 METROPOLITAN CHARLOTTE (N.C.-S.C.)	69	1	7	7	6	25	13	1	2	0	0	0	0	0	0	0	3	0	0	0	1	0	0
	70		7	7	3	10	6	2		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	18	8	1		0	0	0	6	0	0	0		0	0	0		0	0
168 NORTHERN COASTAL PLAIN (N.C.)	69	1	1	0	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	9	1	1		0	0	0	9	0	0	0		0	0	0		0	0
169 SANDHILLS (N.C.)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	2	0	0		0	0	0	2	0	0	0		0	0	0		0	0
170 SOUTHERN COASTAL PLAIN (N.C.)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	8	0	0		0	0	0	8	0	0	0		0	0	0		0	0
171 WESTERN MOUNTAIN (N.C.)	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	4	3	1		0	0	0	6	0	0	0		0	0	0		0	0
172 NORTH DAKOTA (REMAINDER)	69	2	2	2	0	4	2	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		7	2	1	9	3	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	0	2	0	0		0	0	0	0	0	0	0		0	0	0		0	0
173 DAYTON (OHIO)	69	1	2	2	2	2	2	0	2	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	1	1	1	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	1	1	0		1	0	0	1	0	0	0		0	0	0		0	0
174 GREATER METROPOLITAN CLEVELAND (OHIO)	69	1	29	29	29	30	29	13	1	13	9	5	14	3	1	0	3	0	0	0	1	0	0
	70		17	17	17	30	23	13		13	10	5	20	6	0	0		0	0	0		0	0
	71		24	24	24	32	32	12		18	8	3	22	4	1	0		0	0	0		0	0
175 MANSFIELD-MARION (OHIO)	69	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
176 METROPOLITAN COLUMBUS (OHIO)	69	1	1	1	1	1	1	0	3	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	1	1	1	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M: P.P.M:	PRIORITY	#STA (1)	#> SEC 60 -	#> PRI 75 -	#STA (2)	#> SEC 150 -	#> PRI 260 -	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
177 NORTHWEST OHIO	69	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
178 NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN)	69	*1	3	2	1	4	3	1	2	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		3	2	2	3	2	1		1	0	0	2	0	0	0		0	0	0		0	0
	71		3	2	1	3	1	0		2	0	0	2	0	0	0		0	0	0		0	0
179 PARKERSBURG-MARIETTA (OHIO-W.VA.)	69	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	2	2	0		0	0	0	0	0	0	0		0	0	0		0	0
180 SANDUSKY (OHIO)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
181 STEUBENVILLE-WEIRTON-WHEELING (OHIO-W.VA)	69	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	1	8	7	2		0	0	0	6	0	0	0		0	0	0		0	0
182 WILMINGTON-CHILLICOTHE-LOGAN (OHIO)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
183 ZANESVILLE-CAMBRIDGE (OHIO)	69	2	0	0	0	0	0	0	14	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
184 CENTRAL OKLAHOMA	69	1	1	1	0	12	5	2	3	0	0	0	0	0	0	0	3	0	0	0	1	0	0
	70		12	10	3	26	24	14		0	0	0	0	0	0	0		0	0	0		0	0
	71		15	8	2	32	22	6		0	0	0	2	0	0	0		0	0	0		0	0
185 NORTH CENTRAL OKLAHOMA	69	1	0	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	5	1	0		0	0	0	1	0	0	0		0	0	0		0	0
186 NORTHEASTERN OKLAHOMA	69	1	2	0	0	4	2	0	3	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		2	1	0	9	3	1		0	0	0	1	0	0	0		0	0	0		0	0
	71		7	5	2	19	14	4		1	0	0	3	0	0	0		0	0	0		0	0
187 NORTHWESTERN OKLAHOMA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	JG/CU.M P.P.M	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60	ANNUAL #> PRI 75	24-HOUR #STA (2)	24-HOUR #> SEC 150	24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40 35	8-HR #> STD 10 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
188 SOUTHEASTERN OKLAHOMA	69	3	0	0	0	5	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	2	0	13	6	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		4	1	1	11	4	2		0	0	0	1	0	0	0		0	0	0		0	0
189 SOUTHWESTERN OKLAHOMA	69	3	1	0	0	6	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	4	3	3		0	0	0	0	0	0	0		0	0	0		0	0
	71		2	1	1	7	4	2		0	0	0	2	0	0	0		0	0	0		0	0
190 CENTRAL OREGON	69	2	0	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
191 EASTERN OREGON	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
192 NORTHWEST OREGON	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
193 PORTLAND (WASHINGTON)	69	1	3	3	0	5	4	0	1A	1	0	0	2	1	1	0	1	0	0	0	1	0	0
	70		1	1	1	3	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	3	2	1		0	0	0	1	0	0	0		0	0	0		0	0
194 SOUTHWEST OREGON	69	2	4	3	3	9	5	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	2	1	0		0	0	0	0	0	0	0		0	0	0		0	0
195 CENTRAL PENNSYLVANIA	69	1	3	3	3	18	12	1	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		3	3	3	3	3	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		2	2	1	3	2	0		0	0	0	1	0	0	0		0	0	0		0	0
196 SOUTH CENTRAL PENNSYLVANIA	69	1	2	2	1	2	1	0	2	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	4	4	0		1	0	0	2	0	0	0		0	0	0		0	0
	71		2	2	2	3	1	0		1	0	0	1	0	0	0		0	0	0		0	0
197 SOUTHWEST PENNSYLVANIA	69	1	2	1	1	2	1	1	1	2	1	0	2	0	0	0	1	0	0	0	1	0	0
	70		1	1	1	1	1	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	0		1	0	0	1	0	0	0		0	0	0		0	0
198 CAMDEN-SUMPTER (S.C.)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES ANNUAL #STA (1)	SUSPENDED PARTICULATES ANNUAL #> SEC 60	SUSPENDED PARTICULATES ANNUAL #> PRI 75	SUSPENDED PARTICULATES 24-HOUR #STA (2)	SUSPENDED PARTICULATES 24-HOUR #> SEC 150	SUSPENDED PARTICULATES 24-HOUR #> PRI 260	SULFUR DIOXIDE PRIORITY	SULFUR DIOXIDE ANNUAL #STA (1)	SULFUR DIOXIDE ANNUAL #> SEC 60 .02	SULFUR DIOXIDE ANNUAL #> PRI 80 .03	SULFUR DIOXIDE 24-HOUR #STA (2)	SULFUR DIOXIDE 24-HOUR #> SEC 260 .10	SULFUR DIOXIDE 24-HOUR #> PRI 365 .14	SULFUR DIOXIDE 3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	CARBON MONOXIDE #STA (2)	CARBON MONOXIDE 1-HR #> STD 40* 35	CARBON MONOXIDE 8-HR #> STD 10* 9	OXIDANTS PRIORITY	OXIDANTS #STA (2)	OXIDANTS 1-HR #> STD 160 .08
199 CHARLESTON (S.C.)	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
200 COLUMBIA (S.C.)	69	2	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	2	0	0		1	0	0	1	0	0	0		0	0	0		0	0
201 FLORENCE (S.C.)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
202 GREENVILLE-SPARTANBURG (S.C.)	69	1	2	2	2	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	1	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
203 GREENWOOD (S.C.)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
204 GEORGETOWN (S.C.)	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
205 BLACKHILLS-RAPID CITY (S. DAK)	69	3	1	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	1	0	0	0		0	0	0		0	0
206 SOUTH DAKOTA (REMAINDER)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
207 EASTERN TENNESSEE-SOUTHWESTERN VIRGINIA (TENN.-V	69	1	9	4	4	13	9	5	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		9	7	7	13	11	5		0	0	0	1	0	0	0		0	0	0		0	0
	71		2	1	1	10	8	2		0	0	0	0	0	0	0		0	0	0		0	0
208 MIDDLE TENNESSEE	69	1	1	1	1	1	1	0	2	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		16	11	3	18	9	6		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	1	1	0		0	0	0	1	0	0	0		0	0	0		0	0
209 WESTERN TENNESSEE	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60	ANNUAL #> PRI 75	24-HOUR #STA (2)	24-HOUR #> SEC 150	24-HOUR #> PRI 260	SULFUR OXIDES PRIORITY	ANNUAL #STA (1)	ANNUAL #> SEC 60 .02	ANNUAL #> PRI 80 .03	24-HOUR #STA (2)	24-HOUR #> SEC 260 .10	24-HOUR #> PRI 365 .14	3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	#STA (2)	1-HR #> STD 40* 35	8-HR #> STD 10* 9	OXIDANTS PRIORITY	#STA (2)	1-HR #> STD 160 .08
210 ABILENE-WICHITA FALLS (TEX)	69	2	1	1	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
211 AMARILLO-LUBBOCK (TEX)	69	2	1	1	0	2	1	0	1	0	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	1	1	5	1	0		0	0	0	2	0	0	0		0	0	0		0	0
	71		0	0	0	4	2	0		0	0	0	2	0	0	0		0	0	0		0	0
212 AUSTIN-WACO (TEX)	69	2	2	1	0	2	0	0	3	0	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		2	2	0	4	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	4	0	0		0	0	0	1	0	0	0		0	0	0		0	0
213 BROWNSVILLE-LAREDO (TEX)	69	1	2	1	1	4	2	2	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		3	3	3	4	1	2		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	4	1	1		0	0	0	0	0	0	0		0	0	0		0	0
214 CORPUS CHRISTI-VICTORIA (TEX)	69	1	2	0	0	3	0	0	1	0	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	1	0	4	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
215 METROPOLITAN DALLAS-FORT WORTH (TEX)	69	2	6	6	6	6	2	1	3	2	0	0	2	0	0	0	3	0	0	0	1	0	0
	70		3	3	3	3	0	0		2	0	0	2	0	0	0		0	0	0		0	0
	71		2	2	1	3	2	0		1	0		2	0	0	0		0	0	0		0	0
216 METROPOLITAN HOUSTON-GALVESTON (TEX)	69	1	11	6	3	13	1	0	1	2	0	0	2	0	0	0	3	0	0	0	1	0	0
	70		8	3	2	12	1	0		1	0	0	1		0	0		0	0	0		0	0
	71		3	2	2	25	8	0		1	0	0	15	0	0	0		0	0	0		0	0
217 METROPOLITAN SAN ANTONIO (TEX)	69	2	15	4	2	18	3	1	3	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	2	1	0		0	0	0	1	0	0	0		0	0	0		0	0
218 MIDLAND-ODESSA-SAN ANGELO (TEX)	69	2	1	1	0	2	1	0	[illegible]	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	2	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	0	5	3	1		0	0	0	1	0	0	0		0	0	0		0	0
219 UTAH (REMAINDER)	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
220 WASATCH FRONT (UTAH)	69	1	2	2	2	6	6	6	1	1	0	0	1	0	0	0	1	0	0	0	1	0	0
	70		2	2	2	2	1	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	2	2	0		0	0	0	1	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION	UG/CU.M: P.P.M:	SUSPENDED PARTICULATES PRIORITY	SUSPENDED PARTICULATES ANNUAL #STA (1)	SUSPENDED PARTICULATES ANNUAL #> SEC 60 -	SUSPENDED PARTICULATES ANNUAL #> PRI 75 -	SUSPENDED PARTICULATES 24-HOUR #STA (2)	SUSPENDED PARTICULATES 24-HOUR #> SEC 150 -	SUSPENDED PARTICULATES 24-HOUR #> PRI 260 -	SULFUR DIOXIDE PRIORITY	SULFUR DIOXIDE ANNUAL #STA (1)	SULFUR DIOXIDE ANNUAL #> SEC 60 .02	SULFUR DIOXIDE ANNUAL #> PRI 80 .03	SULFUR DIOXIDE 24-HOUR #STA (2)	SULFUR DIOXIDE 24-HOUR #> SEC 260 .10	SULFUR DIOXIDE 24-HOUR #> PRI 365 .14	SULFUR DIOXIDE 3-HR #> STD 1300 .50	CARBON MONOXIDE PRIORITY	CARBON MONOXIDE #STA (2)	CARBON MONOXIDE 1-HR #> STD 40* 35	CARBON MONOXIDE 8-HR #> STD 10* 9	OXIDANTS PRIORITY	OXIDANTS #STA (2)	OXIDANTS 1-HR #> STD 160 .08
221 VERMONT (REMAINDER)	69	2	1	0	0	1	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
222 CENTRAL VIRGINIA	69	1	2	2	1	4	1	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	16	5	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		6	3	1	21	10	4		0	0	0	2	0	0	0		0	0	0		0	0
223 HAMPTON ROADS (VA)	69	1	4	3	2	5	1	0	2	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		4	3	2	11	5	1		1	0	0	3	0	0	0		0	0	0		0	0
	71		7	3	2	12	6	2		4	0	0	7	0	0	0		0	0	0		0	0
224 NORTHEASTERN VIRGINIA	69	1A	0	0	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	3	2	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
225 STATE CAPITAL (VA)	69	1	3	3	1	7	0	0	1	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		1	1	1	5	4	1		1	0	0	1	0	0	0		0	0	0		0	0
	71		0	0	0	4	3	0		0	0	0	1	0	0	0		0	0	0		0	0
226 VALLEY OF VIRGINIA	69	1	2	1	1	5	2	1	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		9	5	1	27	9	4		1	0	0	1	0	0	0		0	0	0		0	0
	71		3	1	1	20	6	2		1	0	0	2	0	0	0		0	0	0		0	0
227 NORTHERN WASHINGTON	69	2	1	1	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	1	1	1		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	4	1	0		0	0	0	0	0	0	0		0	0	0		0	0
228 OLYMPIC-NORTHWEST WASHINGTON	69	2	2	1	0	7	5	3	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		5	4	3	6	4	3		0	0	0	0	0	0	0		0	0	0		0	0
	71		5	2	2	6	4	3		1	0	0	2	2	2	0		0	0	0		0	0
229 PUGET SOUND (WASH)	69	1	27	4	1	24	14	3	1A	2	1	0	3	1	1	0	1	0	0	0	1	0	0
	70		17	5	1	31	17	3		3	0	0	4	1	1	1		0	0	0		0	0
	71		3	0	0	7	1	0		1	0	0	2	0	0	0		0	0	0		0	0
230 SOUTH CENTRAL WASHINGTON	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	6	3	0		0	0	0	0	0	0	0		0	0	0		0	0
231 ALLEGHENY (W. VA)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION		SUSPENDED PARTICULATES							SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M: P.P.M:	PRIORITY	#STA (1)	#> SEC 60	#> PRI 75	#STA (2)	#> SEC 150	#> PRI 260	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
232 CENTRAL WEST VIRGINIA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
233 EASTERN PANHANDLE (W. VA)	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
234 KANAWHA VALLEY (W. VA.)	69	1	1	1	1	1	1	1	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		2	2	2	2	2	2		1	0	0	1	0	0	0		0	0	0		0	0
	71		2	2	2	14	9	3		1	0	0	9	0	0	0		0	0	0		0	0
235 NORTH CENTRAL WEST VIRGINIA	69	1	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0		0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0		6	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0		2	2	1		0	0	0	0	0	0	0							
236 SOUTHERN WEST VIRGINIA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
																		0	0	0		0	0
237 LAKE MICHIGAN (WISC)	69	2	1	[illegible]	0	1	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	[illegible]	0	13	3	0		0	0	0	0	0	0	0		0	0	0		0	0
238 NORTH CENTRAL WISCONSIN	69	2	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	[illegible]	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	3	1	0		0	0	0	0	0	0	0		0	0	0		0	0
239 SOUTHEASTERN WISCONSIN	69	1	6	4	2	6	4	2	2	1	0	0	1	0	0	0	3	0	0	0	1	0	0
	70		3	3	1	17	3	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		18	[illegible]	9	39	27	7		0	0	0	1	0	0	0		0	0	0		1	1
240 SOUTHERN WISCONSIN	69	2	1	0	0	1	1	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	1	0	6	1	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		5	5	[illegible]	9	5	0		1	0	0	1	0	0	0		0	0	0		0	0
241 CASPER (WYO)	69	2	1	1	0	1	0	0	3	1	0	0	1	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		1	0	0	1	0	0	0		0	0	0		0	0
	71		1	1	1	1	1	0		0	0	0	1	0	0	0		0	0	0		0	0
242 METROPOLITAN CHEYENNE (WYO)	69	2	1	0	0	1		0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		1	0	0	1	0	0		0	0	0	0	0	0	0		0	0	0		0	0

Table 3-9 (continued). SUMMARY OF AQCR'S EXCEEDING NATIONAL AMBIENT AIR QUALITY STANDARDS

AIR QUALITY CONTROL REGION			SUSPENDED PARTICULATES						SULFUR DIOXIDE								CARBON MONOXIDE				OXIDANTS		
			ANNUAL			24-HOUR				ANNUAL			24-HOUR			3-HR			1-HR	8-HR			1-HR
	UG/CU.M: P.P.M:	PRIORITY	#STA (1)	#> SEC 60	#> PRI 75	#STA (2)	#> SEC 150	#> PRI 260	PRIORITY	#STA (1)	#> SEC 60 .02	#> PRI 80 .03	#STA (2)	#> SEC 260 .10	#> PRI 365 .14	#> STD 1300 .50	PRIORITY	#STA (2)	#> STD 40* 35	#> STD 10* 9	PRIORITY	#STA (2)	#> STD 160 .08
243 WYOMING (REMAINDER)	69	3	1	0	0	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	1	0	0	0		0	0	0		0	0
	71		1	0	0	2	0	0		0	0	0	1	0	0	0		0	0	0		0	0
244 PUERTO RICO	69	1A	5	4	4	5	2	1	1A	2	0	0	2	0	0	0	3	0	0	0	3	0	0
	70		5	5	4	5	2	1		2	0	0	4	0	0	0		0	0	0		0	0
	71		2	1	1	5	2	1		1	0	0	4	0	0	0		0	0	0		0	0
245 AMERICAN SAMOA	69	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
246 GUAM	69	3	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
247 U.S. VIRGIN ISLANDS	69	1A	0	0	0	0	0	0	1A	0	0	0	0	0	0	0	3	0	0	0	3	0	0
	70		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0
	71		0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0		0	0

3.3 SUMMARY OF EMISSIONS DATA

As previously discussed, emissions data, because of the shorter history of their collection on a systematic basis, are less abundant than air quality data. Further, unlike air quality data, emissions data are largely inferential (i.e., derived from emission factors) and partly the result of direct physical measurement.

3.3.1 National Summary

Table 3-10 presents a summary of nationwide emission estimates. The top half shows the nationwide emission totals resulting from the summation of individual AQCR totals as found in the State Implementation Plans. AQCR totals were obtained by means of a comprehensive emission inventorying technique. This technique involves estimating a majority of the emissions on a point-by-point basis, where such parameters as fuel rates, process rates, control equipment, and efficiencies are known. In the case of area sources, for example, motor vehicle emissions, vehicle miles of travel, average vehicle speeds, and vehicle population and age distribution are all considered in determining the total emissions for that source category.

The SIP emissions data presented should be viewed with some caution. First, because several Regions do not contain a complete set of data for all pollutants,

Table 3-10. COMPARISON OF SIP EMISSIONS AND 1970 NATIONWIDE ESTIMATES (10^6 tons/yr)

Source category	SO_x	PM	CO	HC	NO_x
SIP emissions[a]					
Transportation	0.8	1.1	100.9	18.0	11.6
Fuel combustion in stationary sources	28.9	9.9	1.5	1.0	9.2
Industrial processes	7.8	10.3	10.3	4.3	0.6
Solid waste disposal	0.1	11.1	3.4	1.2	0.3
Miscellaneous	0.2	1.1	2.3	1.5	0.2
Total	37.8	23.5	118.4	26.0	21.9
1970 nationwide estimates[b,c]					
Transportation	1.0	0.8	111.0	19.5	11.7
Fuel combustion in stationary sources	26.4	6.7	0.8	0.6	10.0
Industrial processes	6.4	13.3	11.4	5.5	0.2
Solid waste disposal	0.1	1.4	7.2	2.0	0.4
Miscellaneous	0.2	4.0	18.3	7.3	0.5
Total	34.1	26.2	249.0	34.9	22.8

[a] Source: State Implementation Plans.

[b] Source: OAP Reference Book of Nationwide Emissions, 1970. Internal Document, ATD, NSIS, Durham, N.C.

[c] Not adjusted for 1975 motor vehicle testing procedure or changes in estimating procedures as discussed in trends section.

nationwide totals derived from these data will not be complete. Second, the emissions for all Regions are not necessarily for the same year. Most of the existing data are referenced to the calender year 1970. Third, it is not known whether all States used the same emission factors or estimating techniques in deriving their emission totals. For example, the ratio of CO from transportation to regional population varies to a much higher degree than one would expect because of differences in traffic flow and vehicle miles of travel.

Finally, these SIP emissions were calculated on the basis of the 1972 automotive testing procedure. Presently, emissions are calculated using the 1975 testing procedure. This change in testing procedure causes a corresponding change in nationwide emission rates that is not reflected in Table 3-10. For purposes of comparison, nationwide emissions for 1970 are shown based on the 1972 procedure. Tables presented subsequently in this report and in the Emissions Trends section show the emissions based on the 1975 procedure and, thus, are the most up-to-date EPA estimates.

The bottom half of Table 3-10 presents 1970 nationwide emissions. These numbers were derived from nationwide totals of fuel consumption, process weights, and overall average industry control efficiencies. For motor vehicles, nationwide averages of vehicle population and age distribution, average route speeds, and emission factors were used to derive nationwide totals. Comparisons made between the results of these two techniques should be viewed with these differences of procedure in mind.

3.3.2 AQCR Summary

Appendix H is a summary of detailed emission inventory data as submitted by the States in their implementation plans. A separate entry is shown for each of the five major air pollutants (SO_2, PM, CO, HC, and NO_x) with breakdowns for the five most important source categories.

These emission values are the numbers used by the States in control strategy calculations. They are representative of 1970 for most of the States, but some data are reported for 1966, 1968, and 1969. These emissions estimates, together with current air quality data, were used in rollback models to determine the percentage reduction in emissions necessary to attain NAAQS.

Three different summaries are presented. One shows the emission totals for the entire AQCR for interstates only, the second is a summary of AQCR portions within States, and the third shows statewide totals. (All three summaries, in addition, contain the emission densities by pollutant in both tons per square kilometer and tons per person.)

No attempt has been made to compare Regions according to pollutant density in order to develop an emissions priority classification system. The primary reason is that the emission estimates were derived and calculated from a variety of sources. Since estimating techniques and, perhaps, emission factors varied from state to state, any comparisons made between States or between Regions would be of limited value. Also, factors such as meteorology, topography, and source location must be considered.

4. AIR QUALITY AND EMISSIONS TRENDS

Information derived from air quality monitoring programs serves two fundamental purposes. First, the data they yield provide a quantitative assessment of air quality on a nationwide basis. This information is essential in order to identify problems requiring particular attention and remedial control action. It has already been explained in this report how air quality information is used to identify the relative severity of regional air contamination by specific pollutants through the Priority Classification system. Second, air quality data, reflecting successive measurements of the same pollutant over extended periods, provide an indication of the way in which particular concentration parameters vary with time. These variations are usually quite complex because of the variety of factors that affect them (Appendix D). Assuming, however, that through appropriate analytical procedures, meaningful trends can be identified and described, the value of sequential pollutant measurements on an areal basis can be quite useful. This is because such trends could provide a clear picture of the rate at which SIP control measures are effective in achieving NAAQS.

A considerable amount of effort has been expended in the development and application of statistical techniques for the determination of basic trend information from diffuse and complex data sets. Analytical procedures developed for this purpose have been established to the point that trend analyses can now be applied.

This chapter is largely devoted to the analyses of air quality data available at this time with the view of presenting such long- and short-term trends for specific pollutants as the current data can justify. The Office of Air and Water Programs, on the basis of detailed studies, is oriented to the view that the difficulties in generating useful and indicative trend analyses at this time are caused less by the inherent complexities of the problem than they are by areas of incompleteness and uncertainties of information reliability that pervade the available data base. As discussed earlier, however, it is expected that, as the monitoring activities under the SIP's become fully operational, both the quality and quantity of the data base will progressively improve and that this improvement will be reflected in a higher level of reliability of future trend analyses than is possible at this time.

In addition to trends in air quality, this chapter also presents a summary account of emissions trends on a nationwide basis by source category. As previously discussed, similar information on an AQCR basis is not available. Because of the causal relationship between emissions and air quality, it would be very desirable to have emissions information for each AQCR for a time period corresponding to that for which air quality data exist. Emissions information of this kind would provide insight into the relationship between air quality trends and the enforcement of emissions control measures.

4.1 NATIONWIDE EMISSIONS TRENDS

Emissions trends discussed are based on data for five major air pollutants (SO_2, PM, CO, HC, and NO_x) over the period 1940 to 1970.* Levels of emissions were estimated by means of various indicators such as national totals of fuel consumption, refuse burning rates, vehicle miles of travel, industrial production rates, and control efficiencies. Average emission factors, which relate these indicators to emission rates for specific source categories, were used in deriving the estimates. It is believed that these estimates provide fairly reliable representations of nationwide emission totals.

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*A much more detailed discussion, including tables and methodology, is presented in Nationwide Air Pollutant Emission Trends, 1940-1970, AP-115.

The accuracy of the estimates for different pollutants varies. For CO, NO_x, and SO_2, the estimates should be reasonably good because detailed studies have been completed and overall source control efficiencies are known. For particulate matter and hydrocarbons, information on the extent and degree of control exercised in some source categories is not yet complete; therefore, estimates of PM and HC emission levels are not as accurate.

Yearly fluctuations in emission levels for some source categories are difficult to detect. For example, changes in the sulfur content of fuels can vary significantly from one year to the next. In the absence of continual and systematic updating of information, only estimates of such changes can be made. Over a longer time-frame of 5 to 20 years, however, not only are mere fluctuations easier to detect, but their impact is more readily apparent than is true on a year-to-year basis.

Estimated nationwide totals of emission levels over a 30-year time span are presented in Table 4-1. The yearly emission rate is categorized according to controllable and miscellaneous (uncontrollable) emissions.

These estimates reflect the latest EPA data on emission factors and source activity rates as well as the use of the 1975 testing procedure method of estimating motor vehicle emissions. The 1975 testing procedure is thought to be more representative of actual driving conditions that the old 1972 procedure. Miscellaneous sources include forest fires, structural fires, and other pollutant origins over which man has no real effective control. It is important to note that not all natural sources of pollution are included because of the lack of information on totals or emission factors. Figures 4-1, 4-2, and 4-3 depict the change in emission rate with time. Pollutants related to the quantity of fuels burned, i.e., CO, HC, and NO_x, increase almost logarithmically. Data for CO and HC suggest the beginning of the anticipated downward trend in 1968 that was coincidental with the advent of motor vehicle controls. Pollutants more related to the quality of fuels, i.e., SO_2 and PM, show a more erratic behavior with time.

Over the 30-year interval, total CO emissions increased at a compound rate of 1.5 percent per year. The emissions from automotive sources, however, have increased at an annual rate of nearly 4.0 percent. The difference in growth rates between automotive CO and total CO is accounted for by a proportionally greater reduction in emissions from stationary fuel combustion and miscellaneous sources than from automotive sources.

Hydrocarbon emissions increased about 1.7 percent annually from 1940 to 1970. Automotive sources alone represent a rate increase of nearly 3.3 percent. The control of hydrocarbons from the crankcase (or blowby) reduced average per-vehicle emissions by one-third in the early 1960's. This resulted in an HC emission growth rate from vehicles lower than the CO growth rate.

For the period 1940 to 1970, the growth rates of NO_x emissions from motor vehicles and stationary fuel combustion sources were very similar, being 4.8 percent and 3.7 percent, respectively. Over the period 1940 to 1960, however, the average road vehicle emission growth rate was 4.9 percent, and the stationary fuel combustion source growth rate was only 2.0 percent. During the period 1960 to 1970, these trends were reversed, and the road vehicle emission growth rate was 4.6 percent as opposed to a 7.3 percent increase for stationary fuel combustion sources. Over the last 10 years, NO_x emissions from steam-electric power plants increased at a rate of 7.4 percent.

Table 4-1. ESTIMATED TOTAL NATIONWIDE EMISSION LEVELS, 1940-1970
(10^6 tons/yr)

	SO_2	PM	CO	HC	NO_x
1940 Controllable	22.2	19.2	42.5	10.1	5.5
Misc. (uncontrollable)[a]	0.6	25.7	30.5	6.5	1.0
Total	22.8	44.9	72.5	16.6	6.5
1950 Controllable	24.3	20.8	62.3	15.6	8.2
Misc. (uncontrollable)	0.6	12.4	20.6	6.2	0.6
Total	24.9	33.2	82.9	21.8	8.8
1960 Controllable	22.6	21.0	79.3	18.8	10.9
Misc. (uncontrollable)	0.6	8.9	19.3	7.0	0.5
Total	23.2	29.9	98.6	25.8	11.4
1968 Controllable	30.5	22.5	93.4	22.1	19.1
Misc. (uncontrollable)	0.6	5.9	18.0	7.6	0.4
Total	31.1	28.4	111.4	29.7	19.5
1969 Controllable	31.9	22.8	97.6	21.9	20.6
Misc. (uncontrollable)	0.2	12.2	17.5	6.8	0.5
Total	32.1	35.0	115.1	28.7	21.1
1970 Controllable	33.3	22.3	96.0	22.5	22.0
Misc. (uncontrollable)	0.1	3.2	4.7	4.8	0.1
Total	33.4	25.5	100.7	27.3	22.1

[a] Uncontrollable sources include forest fires, structural fires, coal refuse banks, some agricultural burning, and some solvent evaporation.

Figure 4-2 presents the SO_2 emissions from 1940 to 1970. The total emissions increased very slightly from 1940 to 1960, but then increased rapidly at a rate of 2.6 percent per year from 1960 to 1970. Emissions from steam-electric utilities increased logarithmically over the 30-year interval at a rate of around 6.6 percent per year, nearly five times the rate for SO_2 overall. Emissions from industrial processes have also increased over the same time period, but at a rather low rate (1.9 percent). All other source categories show a decrease in emissions with time.

Particulate emissions from controllable sources (Figure 4-3) have shown almost no change with time (20 million tons in 1940 versus almost 22 million in 1970). This is attributed, in part, to changing fuel patterns and increased effectiveness of controls on power plants and industrial process sources. Process-loss emissions have increased very slowly, however, over the 30-year interval, whereas overall stationary fuel emissions have declined at a fairly constant rate of 1.1 percent. The rates of change for the various pollutant emission levels by source category are presented in Table 4-2.

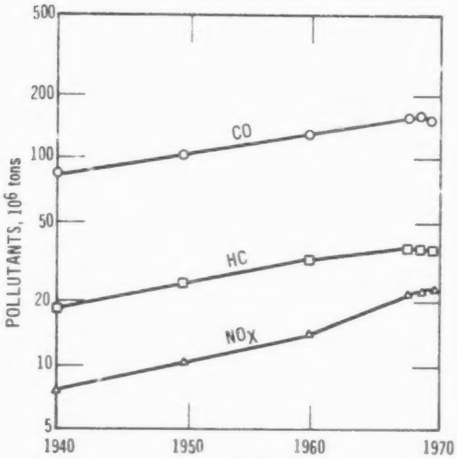

Figure 4-1. Nationwide emissions for HC, CO, and NO_x (1940-1970).

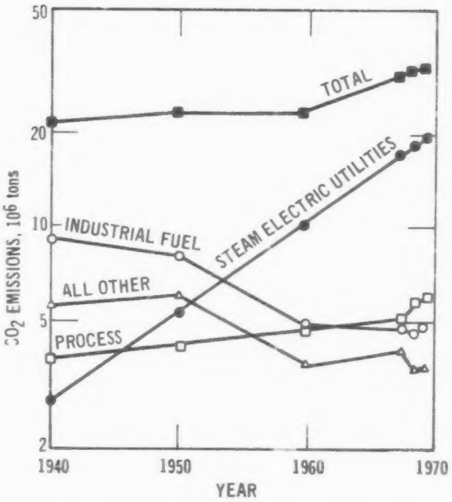

Figure 4-2. Nationwide SO_2 emissions (1940-1970).

4.2 NATIONWIDE AIR QUALITY TRENDS

Air quality trends are assessed by the measurement of changes in specific pollutant concentrations on a pollutant-by-pollutant basis. At this time, it is not feasible to evaluate air quality on the basis of a single number or index that would combine the contributions of all pollutant concentrations. The techniques employed consist essentially of partitioning the historical data records into discrete time intervals. Valid data for these intervals are then successively compared to determine the magnitudes and directions of changes in pollutant level concentrations. The lengths of the intervals for which the comparisons are made are determined, in large part, by whether short- or long-term trends are being studied. In general, short-term trends may exhibit considerable variability because of transient effects such as those of meteorological origin. Fluctuations of this kind tend to be averaged out over long time intervals, however.

This chapter presents analyses of air quality trends based on NASN and CAMP data on both a regional and site basis.

4.2.1 NASN Trends

This section examines national and geographic trends in total suspended particulates and sulfur dioxide by analyzing data collected through the National Air Surveillance Networks. As previously discussed, the NASN is a Federally funded air quality monitoring network operated with the assistance and cooperation of State and local agencies. The NASN program was begun in the mid-1950's with 17 urban stations, and grew to approximately 150 TSP-sampling stations located throughout the United States by the mid-1960's. The number of stations that comprise the NASN has fluctuated from year to year and reached its zenith in 1971-72 when over 260 TSP and 200 SO_2 stations were maintained. Presently, there are some 258 TSP and 202 SO_2 sampling stations located in the 50 states and Puerto Rico.

When the NASN was established, resource limitations dictated placement of only one station in each major urban area. Stations were located primarily in the downtown or center-city areas and, hence, do not necessarily reflect the "worst" air quality to be found through heavily industrialized portions of many cities. For this

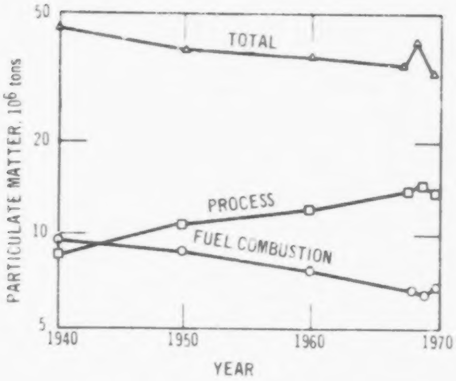

Figure 4-3. Nationwide particulate matter emissions (1940-1970).

Table 4-2. RATES OF CHANGE FOR NATIONWIDE EMISSIONS
(percent)

Pollutant category	1940-1970	1940-1960	1960-1970
CO - Total	1.1	1.5	0.2
CO - Road vehicles	4.0	4.3	3.4
HC - Total	1.7	2.2	0.6
HC - Road vehicles	3.3	4.3	1.0
NO_x- Total	4.2	2.9	6.8
NO_x- Road vehicles	4.8	[illegible].9	4.6
NO_x- Fuel combustion	3.7	2.0	7.3
NO_x- Steam-electric utilities	7.1	6.9	7.4
SO_x- Total	[illegible].3	0.6	2.6
SO_x- Fuel combustion	1.5	0.2	4.2
SO_x- Steam-electric utilities	6.6	6.5	6.7
SO_x- Industrial process	1.9	1.3	3.0
PM - Total	-1.9	-2.0	-1.6
PM - Industrial process	1.4	1.5	1.1
PM - Fuel combustion	-1.1	-1.1	-1.1
PM - Steam-electric utilities	2.1	4.1	-1.8
Population - U.S. total	1.45	1.53	1.27

reason, there may be differences between the air quality measurements summarized in this section and those obtained by State monitoring systems used in developing State Implementation Plans.

The trends discussed are based on both annual means and maximum 24-hour values. Urban, nonurban, and geographic trends are examined over a 12-year period for TSP and over an 8-year period for SO_2. For this analysis, the period 1960 through 1971 has been divided into three intervals consisting of the years 1960 through 1963, 1964 through 1967, and 1968 through 1971. The analysis, while focusing primarily on air quality concentration levels and trends over the extended 12-year period, is also designed to present limited evaluation of trends during the most recent interval, 1968 through 1971. This is accomplished by utilizing both statistical tests and graphical presentations. Long- and short-term trends in annual means are assessed by statistical tests based on comparisons among annual geometric means for various years. A tabulation of individual NASN stations showing yearly annual averages and trend summaries is presented in Appendix F. Graphical presentations, utilizing composite averages of annual geometric means, annual arithmetic means, and 24-hour maximum concentrations appear later in this chapter.* In forming the composite average, missing values were derived by interpolation in order to form a complete set of values at a given site for the entire time period considered.

4.2.1.1 Total suspended particulates

4.2.1.1.1 Urban trends - A summary of urban trends is presented in Table 4-3. For the 12-year period, the averages of the annual geometric mean TSP values for 1960 through 1963 are compared with those for 1968 through 1971; for the 8-year period, the equivalent comparison is made between 1964 through 1967 and 1968 through 1971; for the 4-year period, a similar comparison is made among recent short-term changes since 1968. All comparisons are made for the same set of ranges of particulate levels. Significant upward and downward trends are indicated as well as a "no change" category. The trends are grouped according to the air quality in the base period - that is, the air quality of the earliest interval. The last line (Total) indicates the total number of stations showing trends in each of the time periods. From the table, it can be seen that of the 116 stations in the 12-year period, 66 exhibited downward trends, 8 displayed significant upward trends, and 42 indicated no change. This long-term decline in total suspended particulate matter is essentially reiterated in the 8-year period. Of the 119 stations, 53 display a downward trend, whereas only 3 demonstrate a significant upward trend. The most recent short-term picture is somewhat different in that no significant net trend is discernible.

Table 4-3. SUMMARY OF TRENDS IN ANNUAL MEAN SUSPENDED PARTICULATE MATTER CONCENTRATIONS AT URBAN NASN STATIONS, 1960-1971

Annual TSP concentrations in base period, μg/m³	Number of stations											
	Long-term: 12 years 60-63 avg. to 68-71 avg.				Last 8 years 64-67 avg. to 68-71 avg.				Short-term: 4 years 1968 to present			
	Up	No change	Down	Total	Up	No change	Down	Total	Up	No change	Down	Total
150 ≤ 250		4	8	12		1	4	5		3	3	6
90 ≤ 150	2	13	44	59	2	26	32	60	3	48	12	63
60 ≤ 90	6	20	13	39	1	29	17	47	9	72	5	86
< 60		5	1	6		7		7	9	13		22
Total	8	42	66	116	3	63	53	119	21	136	20	177

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*It should be noted that for 24-hour measurements, the maximum concentration is equivalent to the 99th percentile for a sample size of 26.

Individual short-term trends must be evaluated in the context of long-term trends. For example, only two stations with long-term upward trends also show significant upward trends in the last four years. Seven stations, which appear to demonstrate statistically significant increases in the last four years, in fact, show minor reversals of much larger significant downward trends over the whole 12-year period. In a more detailed analysis of the short-term trends, it was found that there was an apparent association between sites that showed an upward trend and those that also experienced decreased rainfall. This is discussed more fully in Section 4.2.1.1.4, Geographic Trends for TSP.

Table 4-3 also indicates that downward trends are associated with higher concentrations during the base period (≥90 μg/m^3), whereas the upward trends are associated with lower concentration levels (<90 μg/m^3). This is also true for the change in the maximum 24-hour TSP concentration as shown in Table 4-4. It should be noted that statistical tests were not employed for determining trends in maximum daily TSP measurements. Accordingly, Table 4-4 displays the direction of changes UP and DOWN, and change magnitudes are presented as percentages. This table shows that within the downward changes, the larger percentage decreases are associated with the higher concentrations for the base period and, for the positive changes, the larger percentage increases are associated with the lower concentrations for the base period. Therefore, both the trends in the annual geometric means and the changes in the maximum 24-hour TSP concentrations demonstrate that locations with the worst problems have shown the most improvement while the cleaner areas have shown a tendancy to degradation. It should be noted that the recent time interval (1968 to present) contains a larger proportion of positive changes than do the prior periods, but these are still largely at smaller concentration levels.

Table 4-4. SUMMARY OF CHANGE IN THE MAXIMUM DAILY SUSPENDED PARTICULATE MATTER CONCENTRATIONS AT URBAN NASN STATIONS, 1960-1971

TSP concentrations in base period, μg/m^3	Number of stations														
	60-63 avg. to 68-71 avg.					64-67 avg. to 68-71 avg.					1968 to present				
	Total		Percent change			Total		Percent change			Total		Percent change		
	Down	Up	<-25	±25	>25	Down	Up	<-25	±25	>25	Down	Up	<-25	±25	>25
250	54	4	44	12	2	47	4	37	14		45	15	31	21	8
50 - 250	39	7	24	20	2	41	10	30	14	7	41	37	12	54	12
90 - 150	7	4	4	7		11	5	5	10	1	10	22	2	20	10
60 - 90	0	1		1			1			1	2	4		3	3
Total	100	16	72	40	4	99	20	72	38	9	98	78	45	98	33

In summary, both the majority of the annual means and of the maximum 24-hour values declined over the 12-year period. Most of the decline appears to have occurred prior to 1968. Figures 4-4 and 4-5 display this trend. In Figure 4-4, the composite mean is 110 μg/m^3 for 1960 and 85 μg/m^3 for 1971. In Figure 4-5, both the composite averages of the maximum values and the 90th percentiles of the annual maximum values are plotted. Note that the plots of both the 90th percentiles and the composite averages smooth out the extreme fluctuations of the annual and maximum values. The composite average of the maximum values is 270 μg/m^3 for 1960 and 200 μg/m^3 for 1971. The plot of the 90th percentile also exhibits a downward trend. Note that the range in annual values appears to be decreasing as well.

4.2.1.1.2 Comparison to standards - Table 4-5 presents, year by year, the percentage of NASN stations whose measurements exceed the primary and secondary annual mean stan-

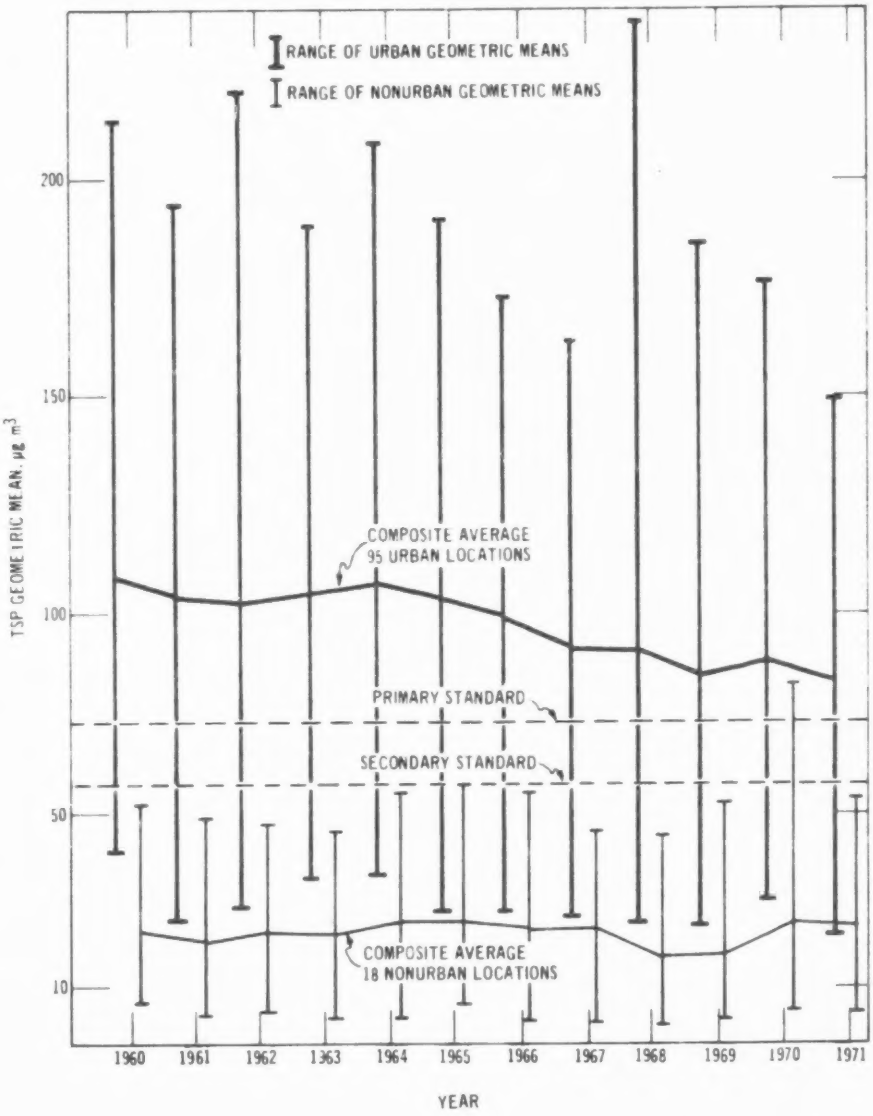

Figure 4-4. Composite annual means of total suspended particulate at urban and nonurban NASN stations.

dards and the primary and secondary 24-hour maximum standards. Although the population of stations changes from year to year, the percent of stations exceeding each of the standards did decrease over the 12-year period.* There is no bias attributable to the change in station population. A subset of 95 stations, which had at least one

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*This population of stations is a subset of the total number of stations that were compared in Table 3-8.

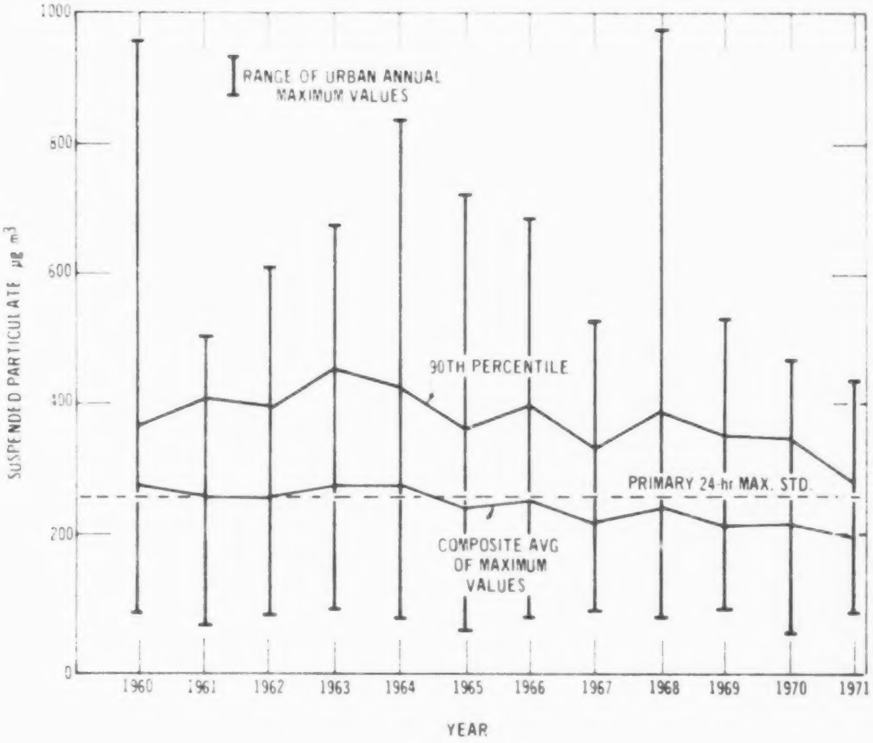


Figure 4-5. Composite average and 90th percentiles of annual maximum daily suspended particulate matter concentrations at 95 urban NASN stations.

data point in each of the three 4-year intervals, showed essentially the same decrease in the percent of stations exceeding each of the standards over the 12-year period. From the early sixties to the early seventies, the percentage of stations exceeding the primary annual standard decreased from approximately 80 to approximately 60 percent; those exceeding secondary annual standards decreased from approximately 90 to approximately 80 percent; and those exceeding the primary and secondary 24-hour maximum standards decreased from approximately 40 to approximately 20 percent, and 90 to 70 percent, respectively.

4.2.1.1.3 Nonurban trends - Trends at nonurban stations were also examined in a similar manner and are summarized in Table 4-6. Over the 12-year period (1960 through 1971), the majority of stations showed no significant change. The downward trends that appear in the analysis of the last 8 years have been effectively cancelled by the upward trends in the last 4 years. This effect can also be seen in Figure 4-4 as the dip in the nonurban composite average for 1968 and 1969. It is interesting to note that 9 of the 10 significant upward trends in the 1968 through 1971 period occurred in areas with decreased rainfall during that time period. Only Cape Hatteras showed a significant increase associated with increased rainfall. This is discussed in greater detail in the following section.

4.2.1.1.4 Geographic trends - Station locations were categorized according to the four geographic regions defined by the Bureau of the Census: North Central, Northeast, South, and West. These regions are outlined in Figure 4-6.

Table 4-5. PERCENT AND NUMBER OF NASN STATIONS EXCEEDING PRIMARY AND SECONDARY ANNUAL MEAN AND 24-hour MAXIMUM STANDARDS FOR SUSPENDED PARTICULATE MATTER, 1960-1971

Year	Total No. of stations	Stations exceeding primary annual mean standard[a]		Stations exceeding secondary annual mean standard[b]		Stations exceeding primary 24-hour maximum standard[c]		Stations exceeding secondary 24-hour maximum standard[d]	
		No.	%	No.	%	No.	%	No.	%
1960	74	63	85	71	96	32	43	6[illegible]	92
1961	72	55	76	63	88	30	42	63	88
1962	74	61	82	67	91	29	39	65	88
1963	86	66	77	80	93	43	50	76	88
1964	80	67	84	74	93	41	51	72	90
1965	89	72	81	83	93	35	39	72	81
1966	77	58	68	69	90	33	43	70	91
1967	90	61	70	80	89	23	26	66	73
1968	122	76	62	104	85	37	30	99	81
1969	165	97	59	139	84	40	24	112	68
1970	170	115	69	153	90	43	25	128	75
1971	130	78	62	104	80	27	21	88	68

[a] Primary annual mean standard = 75 μg/m^3.

[b] Secondary annual mean standard = 60 μg/m^3.

[c] Primary 24-hour maximum standard = 260 μg/m^3.

[d] Secondary 24-hour maximum standard = 150 μg/m^3.

Table 4-6. TRENDS IN ANNUAL MEAN SUSPENDED PARTICULATE MATTER CONCENTRATIONS AT NONURBAN NASN STATIONS, 1960-1971

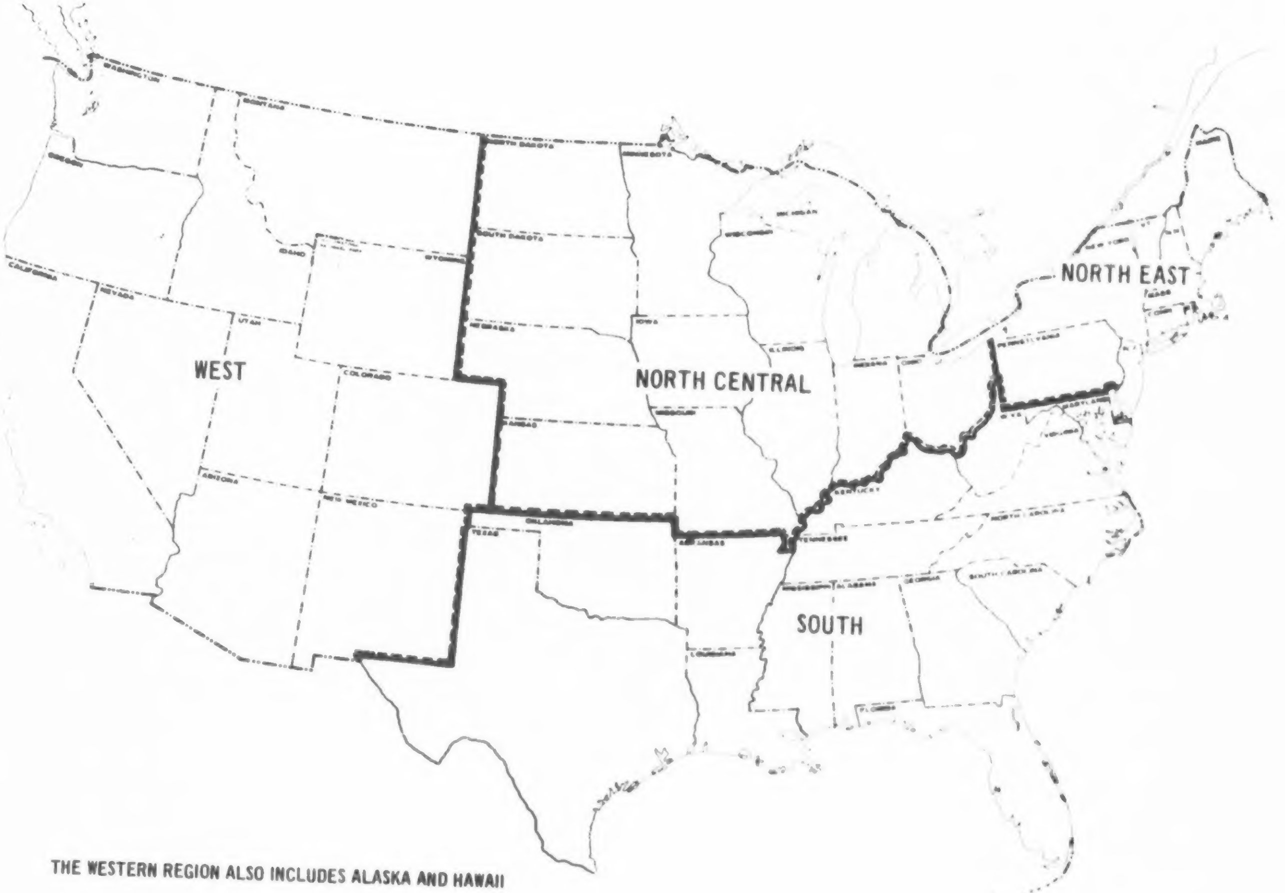
Type of trend	Number of stations 12 years 1960-1971	 Last 8 years 1964-1971	 Last 4 years 1968-1971
Up	2	1	10
No change	11	9	17
Down	5	11	0
Low ($< 10\ \mu g/m^3$)	--	--	2
No. of stations	18	21	29

Composite TSP annual averages (Figure 4-7) for the Northeast and North Central United States have been consistently greater than those for the South and the West. The composite averages for each group showed a decrease in TSP over the entire 12-year period (1960 through 1971).

Although the Northeast had the highest concentration during the early sixties, its level is now comparable with that of the North Central region. The West, whose TSP concentration was initially higher than that of the South, improved greatly toward the mid-sixties. Because of a minor trend reversal in the early seventies, however, its TSP level is now comparable to that of the South.

The statistically significant trends indicated in Table 4-7 show that a majority of sites in each region have demonstrated improvement in air quality over the long-term periods. Some minor differences do exist among the regional trends. The West, although showing the greatest overall improvement since the early sixties, has shown an increase in the number of stations undergoing degradation during the most recent 4 years. In fact, upward trends seem to be most prevalent west of the Mississippi, as shown in Figure 4-8. Some upward trends also occurred in the New England States. The geographical pattern of these upward trends, which occurred within a relatively short-term period (4 years), suggested possible meteorological influences. Of the various meteorological parameters examined, rainfall showed the greatest evidence of a possible association with TSP trends. To test this, average annual rainfall data were extracted from the Local Climatological Data summaries for about 70 National Weather Service stations distributed across the country. Averages for the first 2 years (1968 and 1969) were compared with those for the second 2 years (1970 and 1971), and the net rainfall changes were noted. It was found that, for stations showing a significant upward trend in TSP west of the Mississippi, 8 of 13 urban stations and all 6 nonurban stations were located in areas in which rainfall tended to decrease during the 4-year period. In the New England States, all three urban stations (which showed increasing concentrations) and the sole nonurban station were also in areas where average rainfall showed a decreasing tendency. In addition, two other nonurban sites east of the Mississippi showed upward trends in areas of decreased rainfall. A corresponding association could not be found between areas of decreasing TSP trends and increasing rainfall.

The above discussion may suggest that the decrease in rainfall in certain areas toward the latter part of the period may have caused significant upward trends in TSP at some stations. Certainly, decreased moisture from rainfall may increase particulate matter entrained into the atmosphere from the surface and may decrease the chances for rainfall removal of airborne particulates (See discussion in Appendix D). The extent that precipitation changes may have contributed to TSP trends cannot be quantified at present, however. Therefore, the apparent association found between upward TSP trend and decreased rainfall, although notable, should not be taken as the sole reason or even the primary explanation for the observed trends. Other forces


WEST
NORTH CENTRAL
NORTH EAST
SOUTH

THE WESTERN REGION ALSO INCLUDES ALASKA AND HAWAII

Figure 4-6. Four geographic regions that comprise the United States as defined by the Bureau of the Census.

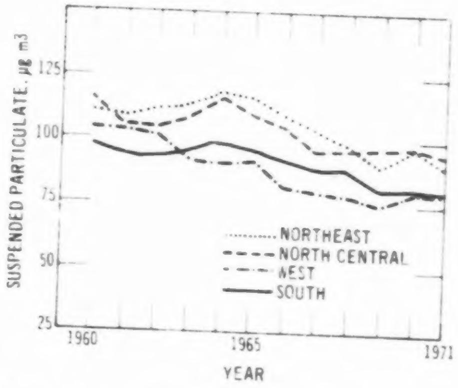


Figure 4-7. Regional comparisons of composite annual mean suspended particulate matter concentrations at urban NASN stations.

Table 4-7. REGIONAL SUMMARY OF TRENDS IN ANNUAL MEAN SUSPENDED PARTICULATE MATTER CONCENTRATIONS AT URBAN NASN STATIONS, 1960-1971

	Long-term (12 years), 1960-1971				Last 8 years, 1964-1971				Short-term (4 years), 1968-1971			
Regions	Up	No change	Down	Total	Up	No change	Down	Total	Up	No change	Down	Total
North Central	3	12	24	39	1	24	16	41	4	41	6	51
Northeast	2	11	14	27	1	9	13	23	5	32	4	41
South	3	14	11	28	0	14	16	30	3	38	8	49
West	0	5	17	22	1	16	8	25	7	22	2	31
Puerto Rico	0	0	0	0	0	0	0	0	2	3	0	5
Total	8	42	66	116	3	63	53	119	21	136	20	177

that were also at work in determining the trends include changes in emission regulations, technology, fuel use, and weather factors such as winds, temperature, humidity, etc.

The composite averages of the maximum values for each of the regions were plotted for the years 1960 through 1971 (Figure 4-9). The trends in composite average maximum values follow the trends displayed in Figure 4-7 for composite annual averages. Over the 12-year period, these trends declined in each of the regions.

4.2.1.2 Sulfur dioxide

4.2.1.2.1 Urban trends - The analysis of SO_2 trends covers the 8-year period, 1964 through 1971, because valid data prior to 1964 are too sparse to support generalizations about the national situation. Only 32 NASN stations had sufficient SO_2 data over the 8-year period to permit trend assessment. The graph of composite annual arithmetic mean concentrations of sulfur dioxide at 32 urban NASN stations, Figure 4-10, shows a marked decline over the 1964 through 1971 period. The composite average of the maximum values and the range of the annual maximum values are presented in Figure 4-11. These trends demonstrate a marked decline over the 8-year period. This

1970 NATIONAL AIR SURVEILLANCE NETWORKS SUSPENDED PARTICULATE NETWORK

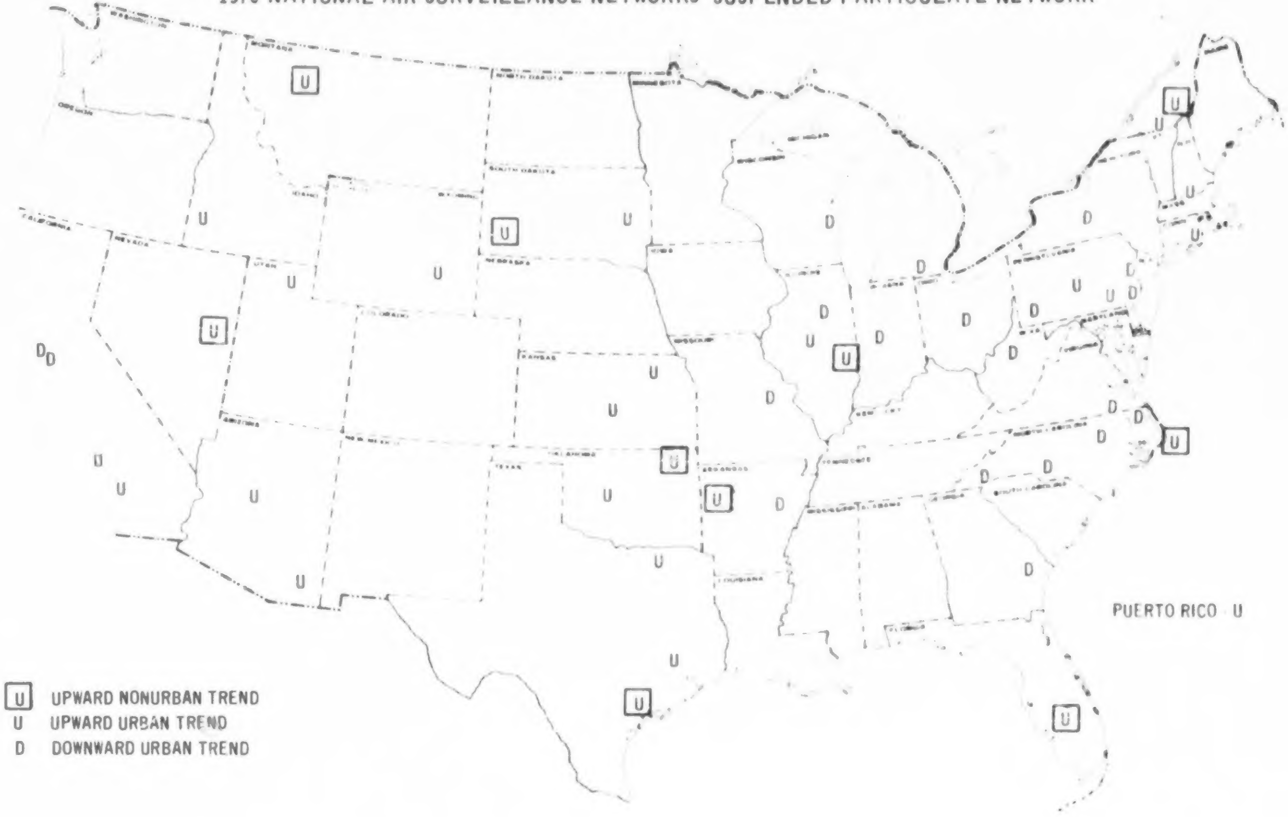

U UPWARD NONURBAN TREND
U UPWARD URBAN TREND
D DOWNWARD URBAN TREND
PUERTO RICO U

Figure 4-8. Comparison of increased and decreased rainfall with upward and downward trends in suspended particulate matter concentrations for 1968-1971.

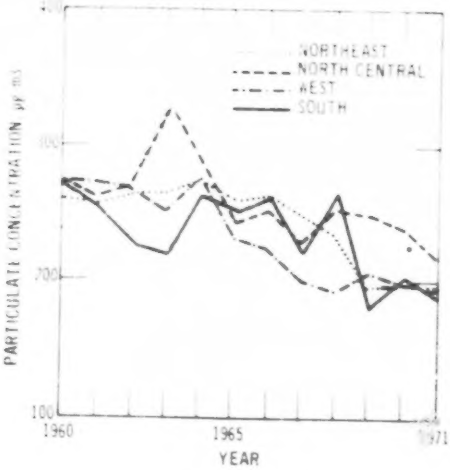


Figure 4-9. Regional comparisons of composite average annual maximum daily suspended particulate matter concentrations at urban NASN stations.

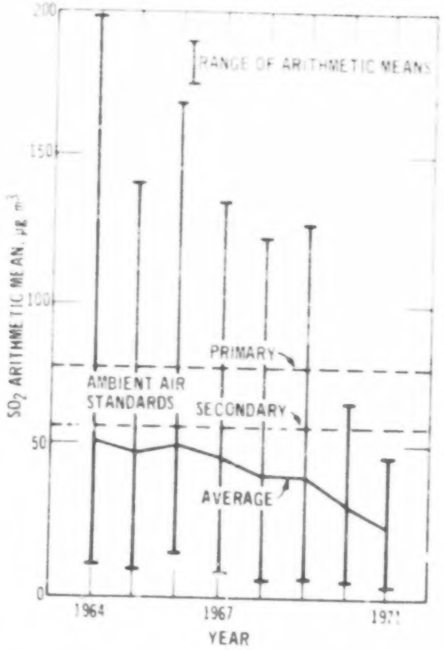


Figure 4-10. Composite annual means of sulfur dioxide at 32 NASN stations.

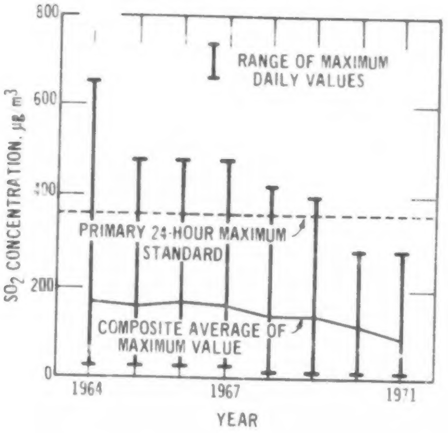


Figure 4-11. Composite average of annual maximum daily sulfur dioxide concentrations at 32 urban NASN stations.

decline is attributable, in some measure, to the institution of regulations in various sections of the country requiring reduced sulfur content in coal and fuel oils.

The arithmetic annual means are shown both in Figure 4-10 and also later with respect to standards. Because the distribution of air quality measurements is generally considered to be more nearly log-normal than symmetrical, geometric means have also been used in the statistical analysis of SO_2 trends in an attempt to improve the sensitivity of the tests. The choice of mean should not affect overall trend patterns.

Table 4-8 shows a net downward trend over the 8-year period. More recent trends in SO_2 are evidenced by examining data from a total of 95 stations that had sufficient data during the last 4-year interval to be meaningful. Of the 95 stations, nearly half (42) show downward trends, and another third (33) have annual means so low (less than 10 μg/m³) that detection of trends is both statistically difficult and unrealistic. Thus, the rate of improvement in SO_2 air quality has been dramatic enough to be readily detectable even over the past few years.

Table 4-8. SUMMARY OF TRENDS IN ANNUAL MEAN SULFUR DIOXIDE CONCENTRATIONS AT URBAN NASN STATIONS, 1964-1971

Type of trend	Number of stations 8 years 1964-1971	Last 4 years 1968-1971
Up	1	3
No change	12	17
Down	19	42
Low (< 10 μg/m³)	--	33
Total No. of stations	32	95

The change in the maximum 24-hour SO_2 values for urban NASN stations is shown in Table 4-9. The changes are overwhelmingly downward, 31 down and 1 up. In the most recent 4-year period, 62 are down and 31 are up. The analysis of the maximum 24-hour SO_2 values supports the earlier finding of a marked decline in SO_2 levels at urban stations.

Table 4-9. SUMMARY OF CHANGE IN MAXIMUM SO_2 DAILY CONCENTRATIONS AT URBAN NASN STATIONS, 1964-1971

SO_2 concentration in base period, μg/m³	Number of stations 1964-1967 avg. to 1968-1971 avg. Total Down	 Up	 Percent change < -25	 ± 25	 > 25	 1968 to present Total[a] Down	 Up	 Percent change < -25	 ± 25	 > 25
> 300	6		6			7			7	
180 ≤ 300	6		6			12	3	9	5	1
90 ≤ 180	10		9	1		21	7	19	5	4
30 ≤ 90	9	1	4	6		12	14	10	9	7
≤ 30						10	7	4	6	7
Total	31	1	25	7		62	31	43	31	19

[a] Two stations showed no change.

4.2.1.2.2 Comparison with standards. Table 4-10 presents, year by year, the percentage of NASN stations exceeding the primary and secondary annual mean standards and the primary and secondary 24-hour maximum standards. Although the population of stations changed from year to year, the percent of stations exceeding each of the standards decreased dramatically over the 8-year period. In 1964, for 18 stations, 33 percent exceeded the primary annual mean standard, 44 percent exceeded the secondary annual mean standard, 33 percent exceeded the primary 24-hour maximum standard, and 28 percent exceeded the secondary 24-hour maximum standard. In 1971, only 0 to 2 percent exceeded any one of the standards. This reemphasizes the sharp decline in SO_2 levels over the 8-year period.

4.2.1.2.3 Nonurban trends. Data for sulfur dioxide at nonurban stations are too sparse to justify a formal analysis, but it can be noted that annual mean SO_2 concentrations at the Kent County, Delaware, station have declined from 21 μg/m³ in 1969 to 8 μg/m³ in 1971, whereas the Acadia National Park, Maine, station has held essentially constant in the 7 to 9 μg/m³ range over the same 3 years.

4.2.1.2.4 Geographic trends. The four regions, North Central, Northeast, South, and West, as defined earlier, were examined for trends in SO_2. Composite annual averages for each of the regions are displayed in Figure 4-12. It can be seen that each of the regions exhibits a downward trend in SO_2 over the 12-year period. The Northeast, with the highest composite average in 1964 of 88 μg/m³, showed the most dramatic decrease with a composite average of 41 μg/m³ in 1971. Similarly, the North Central region has declined from 46 μg/m³ to 24 μg/m³, the South from 34 μg/m³ to 14 μg/m³, and the West from 25 μg/m³ to 14 μg/m³ during the same time period.

The composite average of the maximum values for each of the regions was plotted for the years 1964 through 1971 in Figure 4-13. The trends in composite average maximum values generally follow the trends shown in Figure 4-12 for composite annual averages. With the exception of a minor reversal in 1969 for the West, the trends in each of the regions are on the decline.

The statistically significant trends indicated in Table 4-11 show that each of the regions has demonstrated improvements in SO_2 over the 8- and 4-year periods. Only 1 site in the North Central region exhibited a significant upward trend in the 8-year period out of a total of 32 in all the regions. Of the 95 stations in the 4-year period, only 3 exhibited a significant upward trend. Two of these are located in the Northeast, and one is in the South. The trends in each of the regions follow the national trend of a marked decline in SO_2 at urban stations.

4.2.1.3 Interpretation of results. The result of the NASN SO_2 analysis has shown a very pronounced downward long-term trend over the 8-year period, with the composite average dropping over 50 percent. A review of nationwide emissions data over the same time interval, however, shows an increase in SO_2 emissions from approximately 27 million tons in 1964 to over 33 million tons in 1971 (an increase of over 20 percent). Thus, an apparent inconsistency exists between rising nationwide SO_2 emissions on the one hand and decreasing ambient concentrations on the other.

The following considerations may be helpful in explaining this apparent inconsistency. First, emissions are determined for the nation as a whole, whereas air quality data are generally collected for specific sites in center-city locations. Thus, the impact of changes in and about the sampling sites would have dramatic results on local air quality measurements but insignificant impact on nationwide emissions. Second, because of several factors, SO_2 emission rates in most urban areas are declining. The use of coal in residential and small commercial sources is practically non-existent. Cleaner fuels such as natural gas and distillate fuel oils have replaced coal to a large extent. The impact on total nationwide emissions as a result of this fuel replacement is relatively small, but the effect on local air quality is pronounced. Third, large point sources such as power plants are not able to locate near or in center-city areas. Strict local regulations and fuel avail-

Table 4-10. PERCENT AND NUMBER OF NASN STATIONS EXCEEDING PRIMARY AND SECONDARY ANNUAL MEAN AND 24-hour MAXIMUM STANDARDS FOR SO_2, 1964-1971

Year	Total No. of stations	Stations exceeding primary annual mean standard[a]		Stations exceeding secondary annual mean standard[b]		Stations exceeding primary 24-hour maximum standard[c]		Stations exceeding secondary 24-hour maximum standard[d]	
		No.	%	No.	%	No.	%	No.	%
1964	18	6	33	8	44	2	11	5	28
1965	17	6	35	7	41	0	0	2	12
1966	15	5	33	9	60	2	13	5	33
1967	29	6	21	7	24	4	13	6	20
1968	74	10	14	18	24	4	5	11	15
1969	88	6	7	15	17	3	3	9	10
1970	86	3	3	8	9	1	1	3	3
1971	54	0	0	1	2	0	0	1	2

[a] Primary annual mean standard = 80 $\mu g/m^3$.

[b] Secondary annual mean standard = 60 $\mu g/m^3$.

[c] Primary 24-hour maximum standard = 365 $\mu g/m^3$.

[d] Secondary 24-hour maximum guide = 260 $\mu g/m^3$.

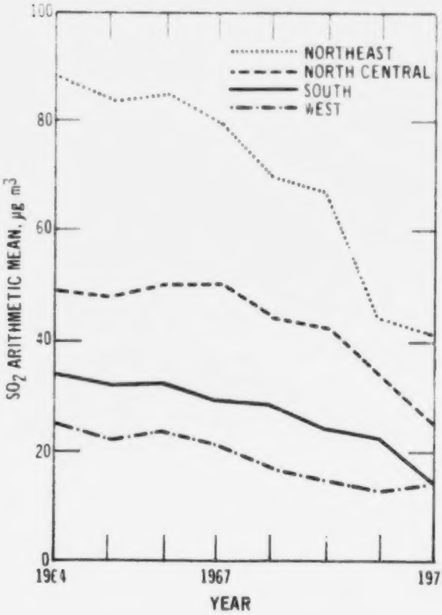


Figure 4-12. Regional comparisons of composite annual arithmetic mean sulfur dioxide concentrations at urban NASN stations.

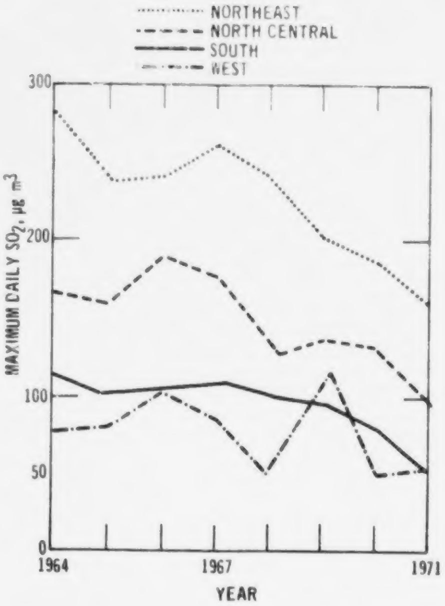


Figure 4-13. Regional comparisons of composite average annual maximum daily sulfur dioxide concentrations at urban NASN stations.

Table 4-11. REGIONAL SUMMARY OF TRENDS IN ANNUAL ARITHMETIC MEAN SULFUR DIOXIDE CONCENTRATIONS AT URBAN NASN STATIONS, 1964-1971

	Number of stations									
	8 years, 1964-1971					Last 4 years, 1968-1971				
Regions	Up	No change	Down	Low	Total	Up	No change	Down	Low	Total
North Central	1	4	7		12		6	17	4	27
Northeast		1	8		9	2	7	14	3	26
South		3	4		7	1	3	7	16	27
West		3	1		4		1	4	10	15
Total stations	1	11	20		32	3	17	42	33	95

ability are determining factors. Increased fuel transportation costs favor the generation of electricity near the fuel source - e.g., mine-mouth operations in Pennsylvania. Finally, emissions generated at ground level, such as from area sources, have a much larger impact on local ambient air quality than the same emissions from an elevated point source.

Although particulate matter concentrations, like SO_2, have shown a decrease since the early 1960's, the percent reduction has not been as dramatic. A conflict also arises with TSP because, again, nationwide emissions have shown a slight increase (about 10 percent) since 1960. The reasons for this apparent conflict are the same. The use of cleaner fuels for home heating and for office buildings would have significant impact on center city monitors, but a small impact on total nationwide emissions. The increasing controls used on stationary sources such as power plants and industries, coupled with relocation, would also contribute to the decreasing air concentrations.

The percentage of improvement for TSP concentrations has not been as great as for SO_2, partly because of the presence of background or noncontrollable "emissions." Background concentrations of SO_2 are essentially zero for urban areas, whereas wind-blown dust and pollen result in particulate concentrations for which emission control plans will have no impact. For this reason, particulate emission reductions are not as effective in terms of percentage of air quality improvement as are similar reductions in SO_2 emissions.

4.2.2 CAMP Trends

The air quality data from the Continuous Air Monitoring Program present an opportunity for examining temporal changes in concentrations of various gaseous pollutants. This section analyzes both inter-station and inter-pollutant trends for NO_x, CO, and oxidants.

CAMP, the Federal government's major effort in providing continuous concurrent data for various gaseous air pollutants, was initiated in 1962 and is now administered by the Quality Assurance and Environmental Monitoring Laboratory of the Environmental Protection Agency. This laboratory provides necessary technical support and serves as the central group for data handling, reduction, and analysis. It is also the entity for reporting the operation. The stations are operated cooperatively with city air pollution control agencies that provide the station sites and, sometimes, the station operators. CAMP provides information on short-term (5-minute) concentrations of gaseous pollutants. This sampling frequency makes it possible to monitor rapid changes in source strength, meteorology, and accompanying atmospheric reactions, thus facilitating study of these variables.

The pollutants monitored at each CAMP station are identified in Table 4-12 together with the measurement techniques utilized. Identical methods for pollutant concentration measurements and calibration procedures are in use at all stations.

Table 4-12. POLLUTANTS MEASURED AND CURRENT MONITORING METHODS USED AT CAMP STATIONS

Pollutant	Sampling method
Carbon monoxide	Nondispersive infrared
Nitric oxide	Saltzman colorimetric
Nitrogen dioxide	Saltzman colorimetric
Sulfur dioxide	Parasosaniline colorimetric
Total hydrocarbons	Flame ionization detection
Methane	Flame ionization detection
Total oxidants	Neutral buffered potassium iodide

CAMP stations are located in Chicago, Cincinnati, Denver, Philadelphia, St. Louis and Washington, D.C. New Orleans, Los Angeles, and San Francisco were previously included in the CAMP network. The stations in Chicago, Cincinnati, Philadelphia, and

Washington, D.C. have been a part of the program since its inception. The Washington, D.C. station was moved to a new location in 1969, temporarily interrupting the data record process. The CAMP station locations were chosen, to the degree practicable, for similarity from city to city. The stations in every case are located in the downtown, central-business district, removed from the direct influence of any nearby large point source. Other station characteristics (e.g., height of sampling probe) are standardized to facilitate inter-city comparisons. It is emphasized, however, that since a CAMP station constitutes only one sampling site per city, its data do not necessarily represent air quality levels prevailing beyond the immediate vicinity of the station.

Because the samples collected at CAMP stations represent, in a number of urban areas, the only data available for air quality trend analysis for gaseous pollutants, the development of national trends is not possible. In addition, data continuity is often lacking. This is particularly true of the total-oxidant data. Many data discontinuities result from changes of site location or procedural methods.

The relocation of the Washington, D.C. station in 1969 makes a discussion of trends impossible there since there is no way of estimating the impact of this move on the recorded air quality levels. In 1968, the SO_2 analysis method at all stations was changed from the conductometric method to the colorimetric pararosaniline method (West-Gaeke). Because of this change, trends in SO_2 will not be considered. Subsequent to the SO_2 method change, the original CO instruments (mono-beam-NDIR) were replaced with dual-beam-NDIR detectors. These and other important changes and their possible effects are listed in Table 4-13.

Table 4-13. MONITORING METHOD AND PROCEDURAL CHANGES AT CAMP STATIONS

Year of change	Type of change	Possible effects
1968	Change in SO_2 instrumentation	Data discontinuity
1969	Change in data retrieval system	Two quarters of data lost for some pollutants
1969	Installed blower on intake manifold to increase airflow	Reduces sample time, possibly affecting NO_x and O_x
1970	Change in CO instrumentation. Change from helium to N_2 for CO zero gas	Eliminate H_2O vapor interference
1970	Installation of integrating chambers for CO	Smooths out concentration plots
1971	Change from N_2 to air for CO calibration gases	Eliminate CO_2 interference

Even though limitations and problems have been experienced, the CAMP data still represent the only long-term continuous data base for use in determining trends in gaseous pollutants for major American cities. Clearly, caution must be exercised before any definite conclusions are reached in the analysis of these data.

4.2.2.1 Trend analysis by pollutant - Trend analysis for CAMP data presented below is for carbon monoxide, nitric oxide, nitrogen dioxide, total oxides of nitrogen (NO and NO_2), and total oxidants. For purposes of comparison, the data are grouped into two time intervals: 1962 through 1966 and 1967 through 1971. The data analyzed for these two time intervals reflect: (1) the amount of information available for the year and, (2) more importantly, the distribution of the data within the year. For example, the data for total oxidants were used in the analysis only when the third quarter (July, August, and September) for the year was sufficiently represented. Because CO follows a generally uniform pattern throughout the year, the distribution of these data was less critical than that of total oxidants, NO, and NO_2. Using this approach, the following data were excluded from the analysis:

City	Pollutant	Year(s)
Chicago	Total oxidant	1969
Cincinnati	NO and NO_2	1970
	Total oxidants	1966, 1969, and 1970
Denver	NO and NO_2	1971
	Total oxidants	1967, 1969, 1970, and 1971
Philadelphia	Total oxidants	1969
St. Louis	Total oxidants	1968, 1969, and 1970

Data for carbon monoxide, NO, and NO_2 were compared for the time periods 1962 through 1966 and 1967 through 1971. This division approximately halves the data records for Chicago, Cincinnati, and Philadelphia because data acquisition at these stations began in 1962. Data collecting at Denver and St. Louis began in 1965 and 1964, respectively; therefore, the period 1967 through 1971 for these cities will include more data than the period 1962 through 1966. The average concentrations were computed for the two periods, together with the averages of the annual second highest values. The averages for the respective periods provide an indication of the long-term trend component. On the other hand, the averages of the second highest 1-hour values were used as estimators of changes in extreme values.

Tables 4-14 through 4-18 present the results of this analysis. Each pollutant is discussed separately.

Table 4-14. CARBON MONOXIDE CONCENTRATIONS MEASURED AT CAMP STATIONS BY NDIR METHOD (mg/m^3)

Station	Annual average concentration		Percent change	Average of annual 2nd highest value		Percent change
	1962-1966	1967-1971		1962-1966	1967-1971	
Chicago	14.6	7.8	-46	47	41	-13
Cincinnati	6.0	4.6	-23	26	27	+4
Denver	8.8	7.2	-18	58	57	-2
Philadelphia	8.3	5.7	-31	45	33	-27
St. Louis	7.1	5.6	-21	29	29	0
CAMP average	9.0	6.2	-31	41	38	-7

4.2.2.1.1 Carbon monoxide - All five stations in Table 4-14 showed a decrease in annual average CO concentrations for the two periods. This percentage decrease ranges from 18 percent for Denver to 46 percent for Chicago. The percent decrease for the average of the five stations is 31 percent. Graphs of the CO annual average concentrations (to be presented later) show a consistent decrease in concentrations throughout the entire data period for most stations. Cincinnati showed a modest increase in the average of the second highest values while Philadelphia showed the largest decrease (27 percent). Average concentrations of CO appear to be decreasing at all the CAMP stations, although a similar change in the second highest value was not observed at any station with the possible exceptions of Philadelphia and Chicago. The earlier

Table 4-15. NITRIC OXIDE CONCENTRATIONS MEASURED AT CAMP STATIONS BY MODIFIED SALTZMAN COLORIMETRIC METHOD
(μg/m^3)

Station	Average concentration		Percent change	Average of annual 2nd highest value		Percent change
	1962-1966	1967-1971		1962-1966	1967-1971	
Chicago	122.6	125.4	+ 2	731	969	+32
Cincinnati	43.8	53.6	+22	782	1067	+36
Denver	44.9	54.4	+21	633	620	- 2
Philadelphia	55.2	65.4	+18	1331	1395	+ 5
St. Louis	39.8	47.6	+19	541	578	+ 7
CAMP average	61.2	69.3	+13	804	926	+15

Table 4-16. NITROGEN DIOXIDE CONCENTRATIONS MEASURED AT CAMP STATIONS BY MODIFIED SALTZMAN COLORIMETRIC METHOD
(μg/m^3)

Station	Average concentration		Percent change	Average of annual 2nd highest value		Percent change
	1962-1966	1967-1971		1962-1966	1967-1971	
Chicago	86.1	101.2	+18	444	499	+12
Cincinnati	62.0	60.0	-3	391	367	-6
Denver	66.0	67.9	+3	498	493	-1
Philadelphia	67.7	77.6	+15	361	414	+15
St. Louis	58.5	54.2	-7	320	267	-16
CAMP average	68.1	72.2	+6	403	408	+1

Table 4-17. OXIDES OF NITROGEN (NO + NO_2) CONCENTRATIONS MEASURED AT CAMP STATIONS
(μg/m^3)

Station	Average concentration		Percent change
	1962-1966	1967-1971	
Chicago	208.7	226.6	+ 8
Cincinnati	105.8	113.6	+ 7
Denver	110.9	122.3	+10
Philadelphia	122.9	143.0	+16
St. Louis	98.3	101.8	+ 3
CAMP average	129.3	141.5	+ 9

Table 4-18. TOTAL OXIDANT CONCENTRATIONS MEASURED AT CAMP STATIONS
BY NEUTRAL BUFFERED KI METHOD
(μg/m^3)

Station	Average of 99th percentile		Percent change	Average of annual 2nd highest value		Percent change
	1962-1966	1967-1971		1962-1966	1967-1971	
Chicago	128.2	166.2	+30	263	299	+14
Cincinnati	191.9	176.9	- 8	333	287	-14
Denver	-	-	-	-	-	-
Philadelphia	211.5	169.6	-20	459	299	-35
St. Louis	-	-	-	-	-	-
CAMP average	177.2	171	- 3	352	295	-16

change in CO instrumentation and operating procedures (1970) has probably exaggerated this pattern of decreasing concentration. The overall effect is, therefore, difficult to quantify with precision.

4.2.2.1.2 Nitric oxide - Nitric oxide concentration trends follow a pattern opposite from that of CO (Table 4-15). The average (1967 through 1971) annual concentration is higher for each station; however, the increase in Chicago is slight (2 percent). The percent increase in the five-station average is 13 percent. The increases are larger for the averages of the annual second highest values for Chicago, 32 percent, and Cincinnati, 36 percent. The other stations showed only very slight changes between the two periods.

4.2.2.1.3 Nitrogen dioxide - The Chicago CAMP station (Table 4-16) showed the largest increase (18 percent) in average concentrations. Philadelphia showed increases of 15 percent for both averages. Cincinnati, Denver, and St. Louis showed only very slight changes. The composite NO_2 average for the five stations showed only a 6 percent increase in the average annual concentration and essentially no change (1 percent) in the second highest value average. These results indicate that NO_2 concentrations did not parallel the increases noted for NO. This could have been caused by restraints that limit the atmospheric conversion of NO to NO_2. Such restraints could be the amount of incident ultra-violet solar energy or the amount of reactive hydrocarbons present.

4.2.2.1.4 Oxides of nitrogen - Most cities showed modest increases in the average NO_x (NO and NO_2) concentrations (Table 4-17). The composite average increase for the five stations was 9 percent.

4.2.2.1.5 Total oxidants - The total-oxidant data are of limited value because they are incomplete (Table 4-18). Only Chicago, Cincinnati, and Philadelphia had sufficient data for analysis. Instead of the average concentrations, the weighted averages (by the number of observations) of the annual 99th percentile concentrations were computed together with the averages of the second highest values. The Chicago station showed the highest increase (30 percent) in the average of the 99th percentiles, whereas Philadelphia had the largest decrease (20 percent). Cincinnati showed only a modest decrease (8 percent) in the average 99th percentile. The limitations in these data make it impossible to reach a meaningful conclusion concerning trends in urban oxidant measurements.

4.2.2.2 Trend analysis by city - In addition to the analyses presented above, CAMP annual averages for NO, NO_2, NO_x, and OX are presented by city in Figures 4-11 through 4-17. Circled annual averages were derived from data that do not satisfy the National

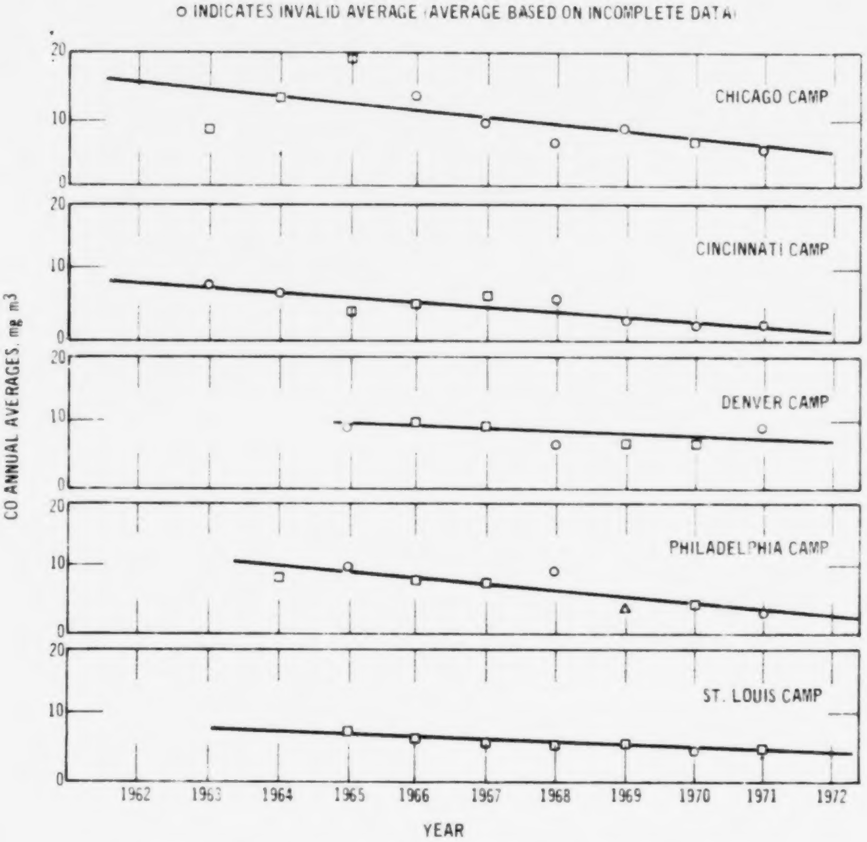


Figure 4-14. Trend lines for CO annual averages in five CAMP cities.

Aerometric Data Bank's minimum sampling criterion, which requires at least 75 percent representation of all possible 1-hour samples in the year. To aid in the interpretation of these time plots, a simple linear regression analysis is provided in which the annual average is displayed as a function of time for each station-pollutant combination. The calculated least-squares regression lines are also shown superimposed over the time plots of the annual averages.

The NO, NO_2, and NO_x graphs and regression lines indicate, for the most part, an increase in annual average concentration with time. The NO results show this pattern more consistently from city to city than either NO_2 or NO_x. The regression lines for Philadelphia NO concentrations were computed with and without the 1962 average included because it appeared to be unusually lower than subsequent averages. With 1962 omitted, the regression line has essentially zero slope, indicating no discernible change in annual average concentration with time. Both the NO_2 and NO_x data for Denver and St. Louis also appear to have varied little over the time span considered. The CO annual averages for all CAMP stations show substantial decreases with time. The slopes of the regression lines (which can be interpreted as the average rates of change in the annual average concentrations) range from -0.26 in Denver to -1.01 in Chicago. The regressions for CO appear to fit the individual annual averages well, indicating that the change in annual average CO concentrations with time is approxi-

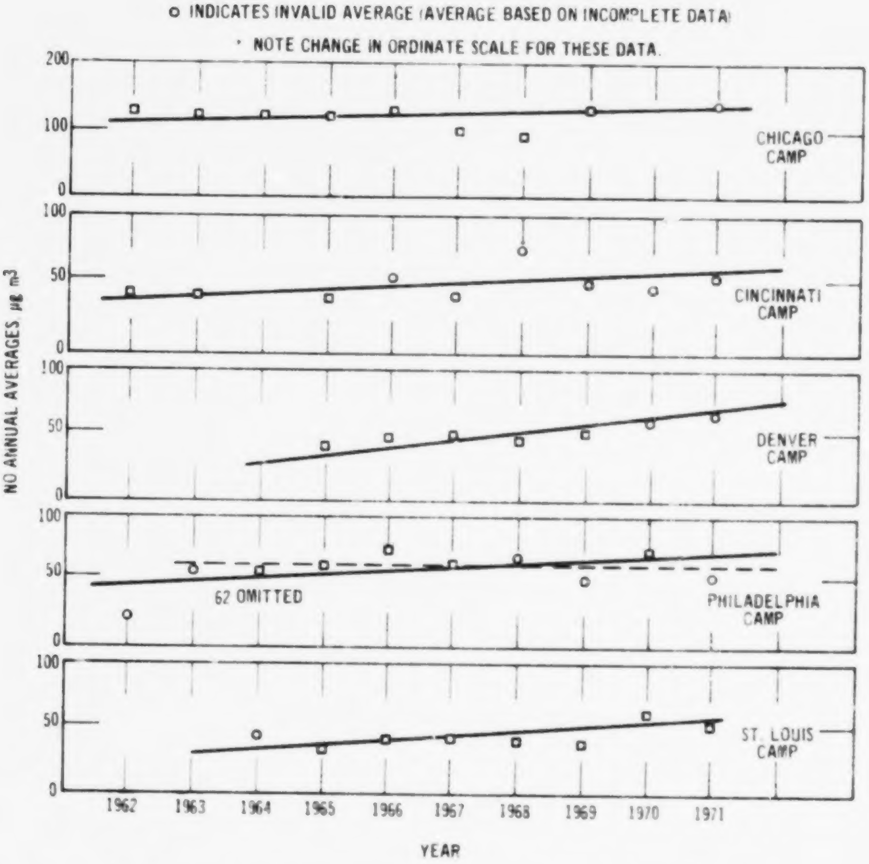


Figure 4-15. Trend lines for NO annual averages in five CAMP cities.

mately linear. Denver is the only station whose averages for the period 1969 through 1971 showed an increase from 6.5 mg/m^3 (1969) to 8.3 mg/m^3 (1971). The individual regressions were all tested for statistical significance at the α =0.05 level. Table 4-19 shows a listing of the significant regressions together with the average percent rate of change per year. The interpretation of trends in the CO data, as mentioned before, must be conducted with a great deal of caution because of the change in instrumentation and the limited information available for recent years. The change in instruments and procedures that occurred in the period 1969 through 1970 at all stations is believed to cause lower measured CO concentrations since the interference of water vapor was presumably minimized.

Because standards for CO are written in terms of 8-hour and 1-hour averages, it is more informative to observe the change with time of a parameter based on its averaging time rather than on annual averages. The effect of the instrumentation changes on the extreme values or the upper percentiles for these short-term averaging times is not as great on a percentage basis as is true for the annual averages. The annual 99th percentiles for hourly CO measurements are shown in Figure 4-18. In most cases, this value has decreased over time. Again, Denver is the exception. Decreases in the 99th percentile over the entire period ranged from about 17 percent

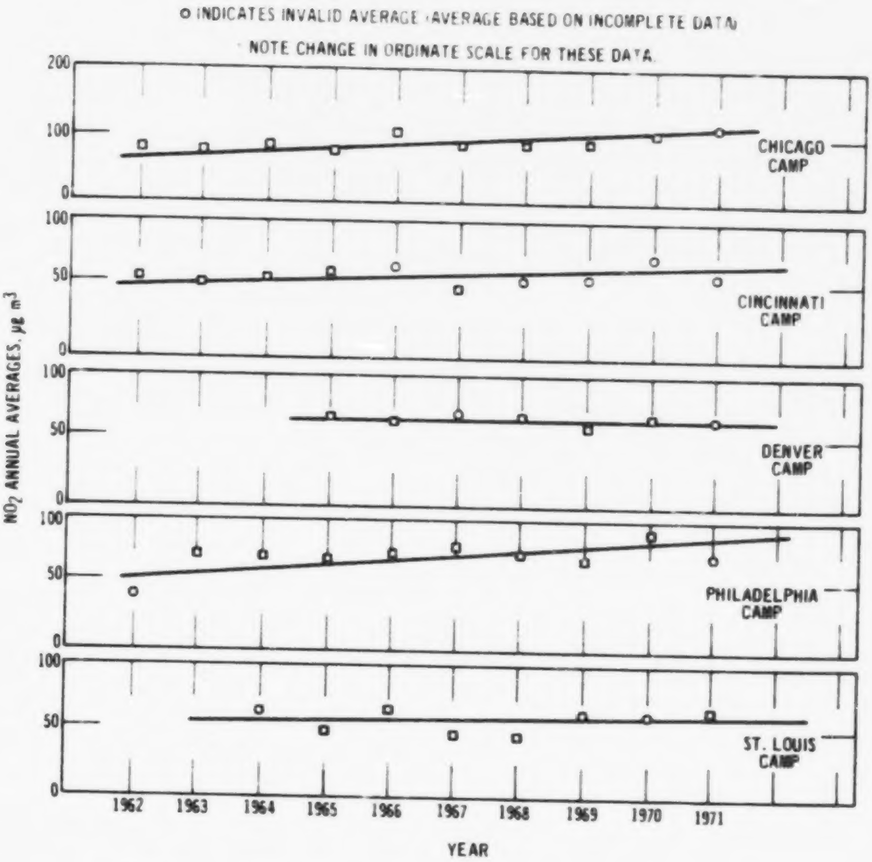


Figure 4-16. Trend lines for NO_2 annual averages in five CAMP cities.

(in St. Louis) to about 55 percent (in Philadelphia). The pattern in Denver was fairly stable with the value for 1971 showing the largest change of about 22 percent above the 1970 value.

The annual 99th percentiles for total oxidants are presented in Figure 4-19. Only in the cases of Chicago and Philadelphia are sufficient data available to permit the detection of possible trends. Chicago averaged 50 to 75 μg/m³ in 1962 and 1963. This level increased to approximately 200 μg/m³ in 1964 and showed little change thereafter. The very low concentrations in the beginning may reflect the reducing effect of SO_2 on oxidants. This effect was corrected in 1964 by the installation of an SO_2 scrubber to the system. The Philadelphia plot reaches a maximum of almost 300 μg/m³ in 1966 and declines to a minimum of 118 μg/m³ in 1971. The 1971 99th percentile for St. Louis is the lowest of any annual value presented for this station. Although Cincinnati lacks 3 years of data (1966, 1969, and 1970), the data that are available indicate a stable situation.

4.3 TREND ANALYSES OF SELECTED AQCR'S

The previous section discussed air quality trends on a nationwide basis for TSP and SO_2, while it examined the automobile-related pollutants in six cities at CAMP

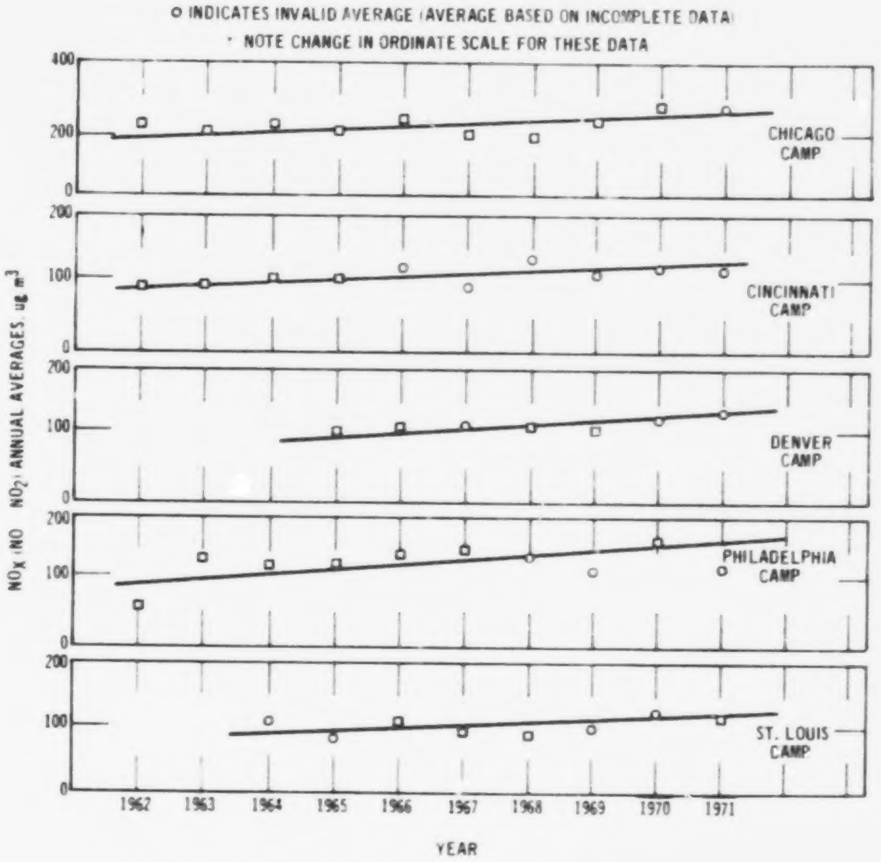


Figure 4-17. Trend lines for NO_x annual averages in five CAMP cities.

sites. The yearly annual means and trend summaries for the NASN stations employed in this analysis are indicated in Appendix F for each AQCR. Since this NASN Trend information is frequently based on only one monitoring site in an AQCR, it can be misleading to assess the progress of an entire AQCR solely on this basis. This section illustrates this point by examining three specific AQCR-pollutant combinations in more detail. By supplementing the NASN data with data from State and local agency monitoring efforts, it is possible to obtain a more complete assessment of the various trends within an AQCR. The three cases treated are (1) oxidants in Los Angeles, (2) suspended particulates in New Jersey-New York-Connecticut, and (3) sulfur dioxide in Chicago. The Regions were selected because they had the most air monitoring sites for each of the three pollutants, and they were Priority I Regions for the given pollutant, indicating that the concentration of that pollutant in the Region is of particular concern with respect to the air quality standards.

The AQCR analyses utilize both statistical tests (with the exception of Los Angeles) and graphical presentations. All annual trends for individual sites were determined by statistical tests based on contrasts of annual geometric means among various years. In addition, graphs are presented for annual means showing trends at selected sites, the behavior of composite averages, and the history of the maximum

Table 4-19. CITY-POLLUTANT COMBINATIONS FROM CAMP STATIONS WHERE STATISTICALLY SIGNIFICANT (α = 0.05 LEVEL) LINEAR CHANGES IN ANNUAL AVERAGE POLLUTANT CONCENTRATION WITH TIME WERE FOUND

City	Pollutant	Pattern of change	Rate of change/yr	Percent rate of change/yr
Chicago	CO	Decreasing	-1.01 mg/m^3	-10
Chicago	NO_2	Increasing	+3.82 μg/m^3	+4
Cincinnati	CO	Decreasing	-0.62 mg/m^3	-14
Cincinnati	NO_x	Increasing	+2.95 μg/m^3	+3
Denver	NO	Increasing	+3.83 μg/m^3	+7
Denver	NO_x	Increasing	+4.01 μg/m^3	+3
Philadelphia	CO	Decreasing	-0.84 mg/m^3	-15
St. Louis	CO	Decreasing	-0.36 mg/m^3	-6

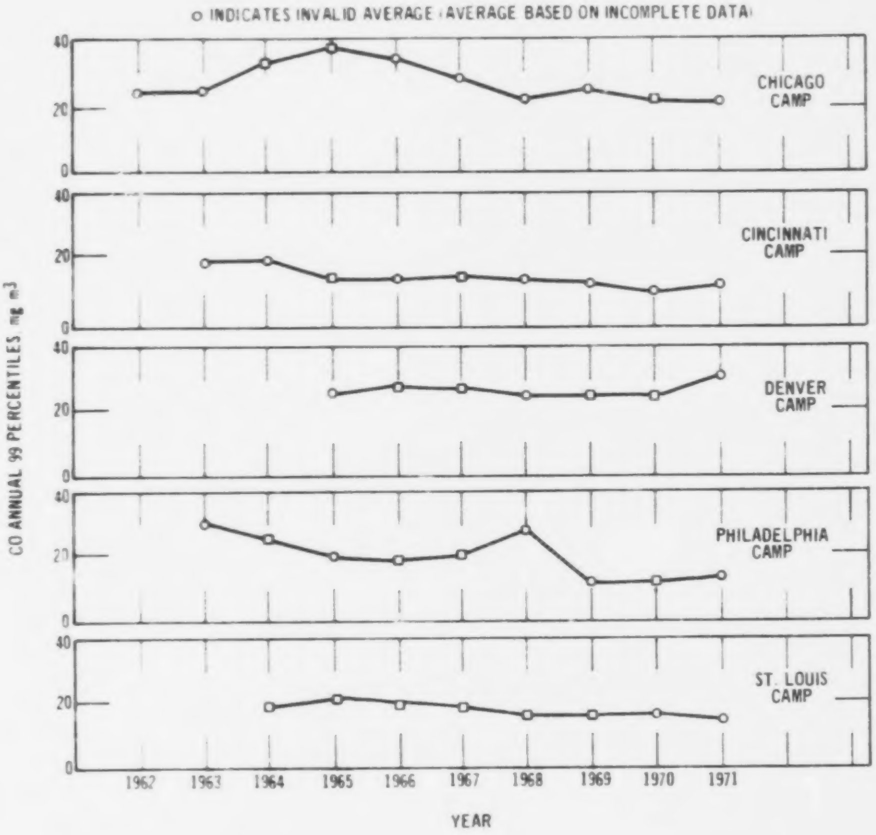


Figure 4-18. Trend lines for annual 99th percentiles of CO in five CAMP cities.

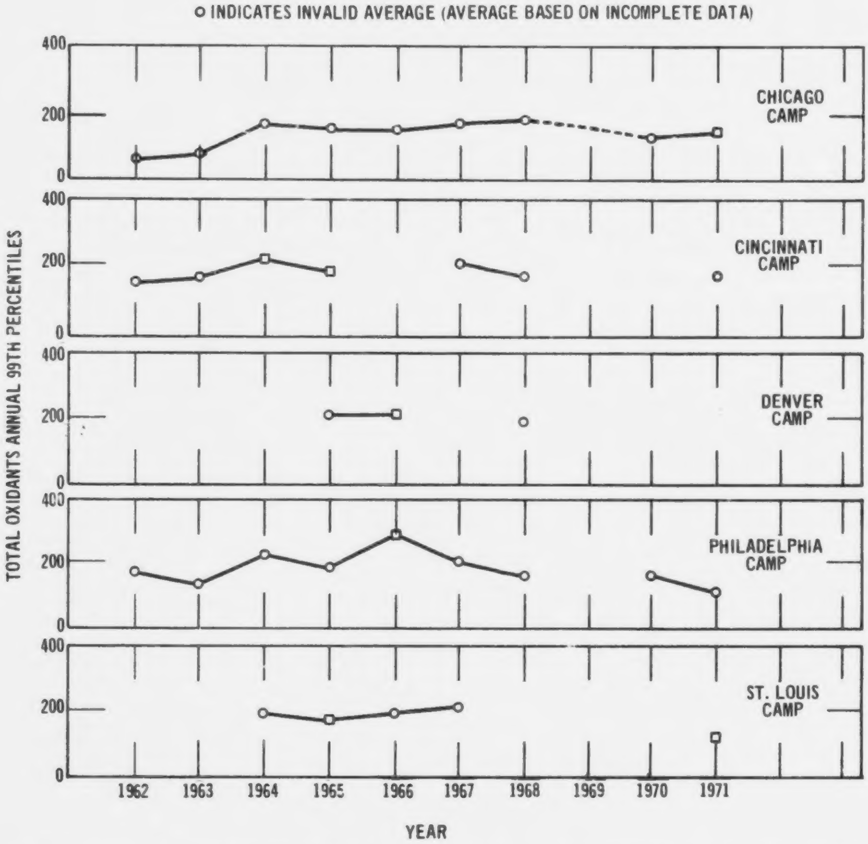


Figure 4-19. Trend lines for annual 99th percentiles of total oxidants in five CAMP cities.

yearly values for the annual means, either in the entire AQCR or in the largest city within the AQCR. The graph of a selected site illustrates the variability associated with ambient air quality measurements, whereas the graph of the composite average summarizes the general trend of all the sites. In forming the composite averages, interpolated values were used for missing values to form a consistent data set for these sites throughout the period of interest. The maximum annual average values in an AQCR were plotted to compare these values to the applicable annual air quality standards.

In addition to this treatment of annual values, similar graphical presentations are provided for various 99th percentile values of 24-hour or hourly measurements. These quantities reflect the historical pattern of the AQCR with respect to short-term air quality standards. In the case of sulfur dioxide and total suspended particulates, 99th percentile values for 24-hour measurements were used to examine the trends in the AQCR with respect to the 24-hour quality standards. These results were then compared with the trends determined for the annual means. For oxidants, the discussion of trends is limited by available data and is based solely on changes in the 99th percentile values of hourly measurements. These values are compared to the maximum hourly oxidant standard and no statistical tests for trends are made. The 99th percentile value was used, rather than the maximum or second highest value, to allow for the different number of observations made at various sites.

In discussing air quality trends within individual AQCR's, it should be noted that the placement of monitoring sites within a Region is not necessarily intended to reflect average values throughout the AQCR. For example, one Region may concentrate its monitoring sites in high-pollution areas, whereas another may choose a more uniform distribution of sites. For this reason, caution should be exercised in making comparisons among Regions based on composite averages. This report is concerned primarily with trends, and these trends should be viewed as applicable to the site rather than to the AQCR as a whole in most instances.

The approach used in this analysis is primarily descriptive. In this report, the emphasis has been placed on determining historical trends in air quality data rather than seeking causal interpretations as to why these trends have occurred. For each AQCR, the trend in ambient air quality levels is affected by factors such as emission regulations and meteorological conditions, which are not discussed in depth in this treatment.

In examining these AQCR's, it should be noted that only those sites having at least 2 years of valid data during the period 1968 through 1971, one of which was after 1969, are used in the analysis of trends in annual values.

The trends in annual means for the New Jersey-New York-Connecticut and the Metropolitan Chicago AQCR's are down for the long term and mixed for the short term. The Los Angeles AQCR has shown declines in 99th percentile values for total oxidant.

Discussions of the results for the Los Angeles AQCR, the New Jersey-New York-Connecticut AQCR, and the Chicago AQCR follow.

4.3.1 Metropolitan Los Angeles Intrastate AQCR

4.3.1.1 Regional description - The Metropolitan Los Angeles Intrastate AQCR has an area of 23,800 square kilometers (9200 square miles) and a population of 9.8 million. The areas included in this Region are shown in Figure 4-20. A series of mountain ranges forms a semicurcular barrier around the Los Angeles Basin area. This Basin includes a small coastal strip extending northwest into Santa Barbara County. The

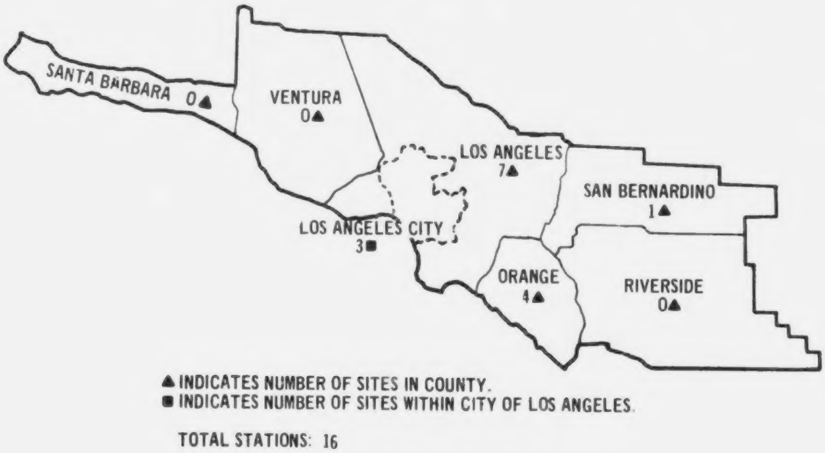


Figure 4-20. Metropolitan Los Angeles Intrastate AQCR.

mountain barrier and low-mixing depths associated with the semipermanent Pacific anticyclone constitute an effective barrier that limits horizontal and vertical ventilation of pollutants generated within the Basin. Particularly in the summer, frequent clear skies with light westerly daytime winds, together with the existing mountain barrier and the large number of automobiles, contribute greatly to the serious photochemical smog problem in the Basin.

4.3.1.2 Oxidant trends - The 99th percentile values for hourly total oxidant values in the Los Angeles AQCR have shown a short-term decline, but the region continues to exceed the maximum hourly oxidant standard. This discussion compares the 99th percentile values at various stations with the hourly standard.* Twelve sites in the National Aerometric Data Bank having at least 2 years of data during the period 1968 through 1971, one of which was after 1969, were used in this analysis. The geographical distribution of these sites is indicated in Figure 4-20. Annual percentile values for these sites are listed in Table 4-20 for the years 1963 through 1971. Figure 4-21 displays the maximum 99th percentile values in the AQCR and also the composite averages of these 99th percentile values. The absence of maximum values for the years 1968 and 1969 can be attributed to the fact that data are available from NADB for only four sites for 1968 and one site for 1969. Values for sites that show consistently higher oxidant levels are not available for this period. The graph of the composite average in Figure 4-21 illustrates both the recent decline in oxidant values and the degree by which the Region exceeds the hourly oxidant standard. Despite this decline in the composite average, there has been no significant change in the percentage of sites exceeding the oxidant standard for the period 1971 through 1972.

Table 4-20. 99th PERCENTILE VALUES FOR HOURLY OXIDANT CONCENTRATIONS IN METROPOLITAN LOS ANGELES INTRASTATE AQCR

($\mu g/m^3$)

City	1963	1964	1965	1966	1967	1968	1969	1970	1971
Anaheim	333	294	470	412	392	333	353	294	235
Azusa	470	588	608	588	647			627	510
Burbank	353	392	490	412	568			431	392
La Habra						294		274	392
Lennox			274	235	255			196	176
Long Beach	196	216	255	235	196			137	157
Los Angeles	372	412	451	412	392			313	274
Los Angeles	372	314	353	333	353			255	216
Los Angeles				450	529			412	353
Pomona				529	568			529	392
San Bernardino	392	470	450	431	451	412		529	451
Santa Ana						196		216	274

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*99th percentile values, although not those used in the definition of the NAAQS's, approximate the standard definition in that they comprise the 87 largest values out of a possible 8760 observations for a year.

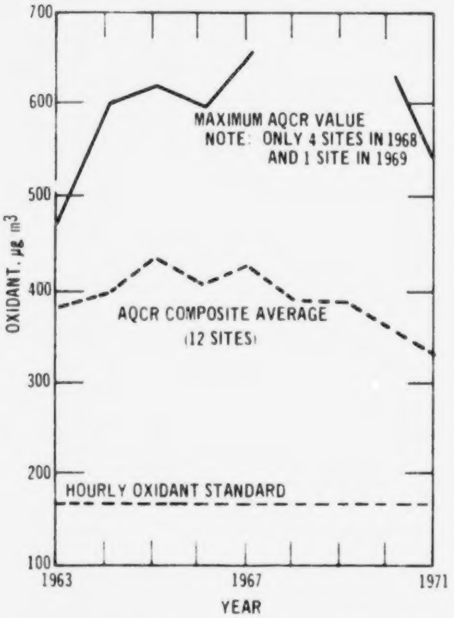


Figure 4-21. 99th percentile values of hourly oxidant concentrations for the Los Angeles Intrastate AQCR.

4.3.2 New Jersey-New York-Connecticut Interstate AQCR

4.3.2.1 Regional description - The New Jersey-New York-Connecticut Interstate AQCR includes New York City and surrounding areas in the three-state Region as shown in Figure 4-22. This Region has a population of 17.3 million and covers an area of 14,560 square kilometers (5,631 square miles). The terrain is generally level except for some hilly areas along the northwest boundary. This terrain and the combination of sea breezes reinforced by the heat-island effect of New York City contribute to a high average wind speed that provides favorable horizontal dispersion as compared to most locations in the Eastern United States.

4.3.2.2 Particulate trends - Forty-two monitoring stations provided the data used in this analysis. Seven of these stations were NASN sites and the balance were State agency sites. The New Jersey-New York-Connecticut AQCR showed an overall long-term downward trend in annual TSP values for the past 12- and 8-year periods. Over the past 4 years, the short-term pattern has been mixed, with the majority of these sites showing no change. These results are summarized in Table 4-21.

Figure 4-23 displays the annual TSP geometric means for NASN sites at Newark, New Jersey and New York City. Both locations show long-term downward trends with no clearcut recent short-term trend. The composite average for all sites considered shows a slight downward trend from 77 $\mu g/m^3$ to 72 $\mu g/m^3$ over the past 4 years. As presented in Table 4-22, only one site showed a long-term upward trend. This increase occurred in Suffolk County over the past 8 years and was attributed primarily to high values in the past 4-year period. Although initially below the standard, TSP values at this site rose above the primary standard in 1970.

Figure 4-24 displays 99th percentile TSP values relative to the 24-hour standards. Although both the Newark and New York City NASN sites showed an overall downward pat-

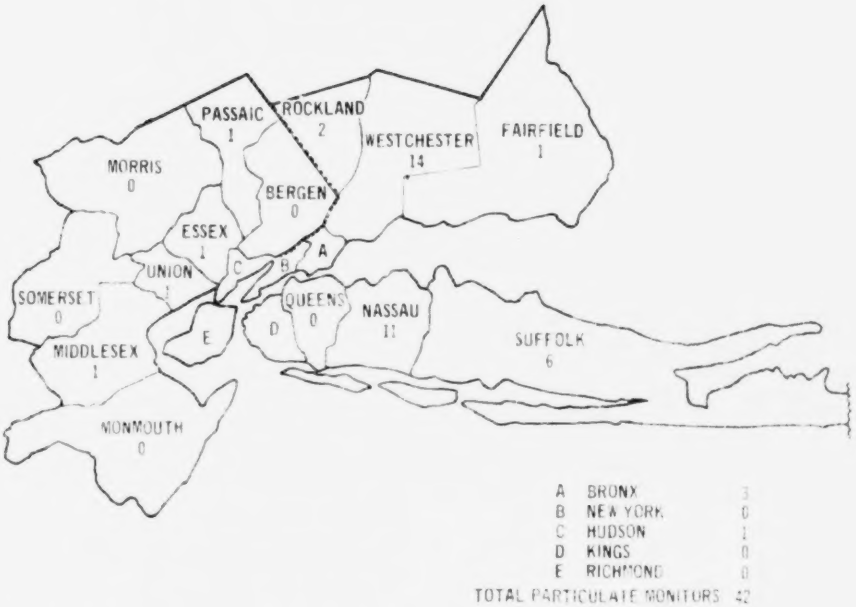

PASSAIC 1
ROCKLAND 2
WESTCHESTER 14
FAIRFIELD 1
MORRIS 0
BERGEN 0
ESSEX 1
UNION 1
C
B
A
SOMERSET 0
QUEENS 0
NASSAU 11
SUFFOLK 6
D
E
MIDDLESEX 1
MONMOUTH 0
A BRONX 3
B NEW YORK 0
C HUDSON 1
D KINGS 0
E RICHMOND 0
TOTAL PARTICULATE MONITORS 42

Figure 4-22. New Jersey-New York-Connecticut Interstate AQCR

term, it is also clear that the 99th percentile values of the second highest station in the AQCR are increasing and are well above the 24-hour primary standard. Because of the large number of sites in this AQCR, and extremely high values at a site for a particular year, the second highest value was plotted rather than the maximum. Tables 4-23 and 4-24 summarize the status of these stations over the past 4 years with respect to the standards. As would be expected from the mixed trends in the past 4 years, there has been no consistent improvement.

4.3.3 Metropolitan Chicago Interstate AQCR

4.3.3.1 Regional description - The Metropolitan Chicago AQCR includes the City of Chicago and surrounding portions of Illinois and Indiana, as shown in Figure 4-25. This Region has a population of 7.1 million and an area of 15,330 square kilometers (5,140 square miles). The generally flat terrain of the Region allows free air movement. Lake breezes and a favored storm-track position provide the strong variable winds characteristic of the area. These favorable topographical and meteorological features minimize the occurrence of stagnant air masses.

4.3.3.2 Sulfur dioxide trends - The Chicago AQCR has shown a marked downward trend in sulfur dioxide levels during the last 8-year period. All sites in the Region with sufficient data showed long-term downward trends. There were 22 sites used for this analysis. The trends at each site are shown in Table 4-25. Twenty of these sites are located in the City of Chicago; the other two are NASN stations located in East Chicago, Indiana and Hammond, Indiana.

The East Chicago site showed a downward trend over the past 8 years. Both Indiana NASN sites showed downward short-term trends. As presented in Table 4-26, the Chicago sites showed a mixed short-term pattern. This was attributed primarily to relative increases in 1970 annual geometric means. The annual arithmetic means for all the 18 stations reporting for 1972 remained below the annual secondary standard.

Table 4-21. NUMBER OF STATIONS SHOWING TRENDS IN ANNUAL MEAN TSP CONCENTRATIONS IN NEW JERSEY-NEW YORK-CONNECTICUT AQCR

Trend	Number of stations			
	1960-1971	1960-1967	1964-1971	1968-1971
Up			1	4
Down	5		11	9
No change	2	6	10	29
Total	7	6	22	42

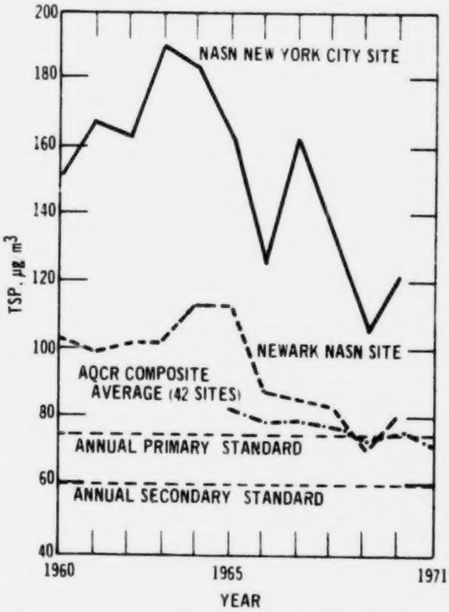


Figure 4-23. TSP annual geometric means for selected stations in the New Jersey-New York-Connecticut Interstate AQCR.

Fourteen of these 18 stations reported lower levels for 1972 than for 1971, and 12 reported their all-time lowest annual levels. Of the nine sites showing upward short-term trends in the period 1968 through 1971. Eight have reported data for 1972, and seven of these reported all-time lows. This indicates that, despite the mixed short-term pattern in the period 1968 through 1971, the long-term downward trend is still continuing.

Although these trend determinations were based on annual geometric means, Figure 4-26 shows that the annual arithmetic means also support the downward pattern. Both the Chicago City composite and the Chicago NASN site showed downward trends and, by 1971, the maximum AQCR annual mean was below the annual primary standard. This downward trend is also apparent in Figure 4-27 for the 99th percentile values. Again, the Chicago City composite and the Chicago NASN site showed downward trends and, by 1971,

Table 4-22. TSP TRENDS FOR MONITORING STATIONS IN THE NEW JERSEY-NEW YORK-CONNECTICUT AQCR, 1960-1971

TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :		ANNUAL GEOMETRIC MEANS A				B				C				TRENDS A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
43 NEW JERSEY-NEW YORK-CONNECTICUT																	
CONNECTICUT																	
BRIDGEPORT	001A01	87	0	89	0	0	0	0	0	0	66	64	58	DOWN			**
NEW JERSEY																	
ELIZABETH	002A01	0	0	0	0	0	0	0	0	0	0	83	87				**
JERSEY CITY	001A01	0	139	0	118	0	133	129	107	101	84	94	100	DOWN	**	DOWN	**
NEWARK	001A01	103	99	101	101	114	113	88	86	83	70	81	0	DOWN	**	DOWN	**
PATERSON	001A01	0	0	0	85	0	99	0	83	78	76	86	0	**	**	**	**
PERTH AMBOY	001A01	0	0	0	0	0	129	0	112	85	73	76	88			DOWN	**
NEW YORK																	
BABYLON	001F01	0	0	0	0	0	86	90	78	59	58	62	63			DOWN	**
GARDEN CITY	001F01	0	0	0	0	0	0	0	0	60	58	60	68				**
GLEN COVE	001F01	0	0	123	0	117	0	0	112	0	110	111	86	**	**	**	DOWN
HEMPSTEAD	001F01	0	0	0	0	0	0	0	104	0	105	121	100			**	**
HEMPSTEAD	003F01	0	0	0	0	0	0	0	0	0	0	95	83				**
HEMPSTEAD	004F01	0	0	0	0	0	0	0	0	0	100	95	73				DOWN
KINGS POINT	001F01	0	0	0	0	0	0	0	84	0	78	0	67			**	**
MAMARONECK	001F01	0	0	0	0	0	0	0	0	0	0	70	63				**
MT VERNON	001F01	0	96	0	95	0	86	80	83	82	70	72	71	DOWN	**	DOWN	**
NASSAU COUNTY	001F01	0	0	0	0	0	0	0	76	0	75	79	61			**	DOWN
NASSAU COUNTY	002F01	0	0	0	0	0	0	0	87	0	77	78	90			**	**
NASSAU COUNTY	005F01	0	0	0	0	0	0	0	0	0	0	64	53				DOWN
NASSAU COUNTY	006F01	0	0	0	0	0	0	0	0	0	0	81	69				**
NEW ROCHELLE	002F01	0	0	0	0	121	126	95	93	86	85	81	78			DOWN	**
NEW YORK CITY	001A01	151	167	162	190	183	164	124	163	0	106	123	0	DOWN	**	DOWN	**
NEW YORK CITY	050F01	0	0	0	0	0	0	0	0	0	0	94	83				**
NEW YORK CITY	057F01	0	0	0	0	0	0	0	0	0	0	94	90				**
NORTH TARRYTOWN	001F01	0	0	0	0	0	0	0	0	0	54	56	56				**
OSSINING	001F01	0	0	0	0	0	69	67	72	64	58	59	50			DOWN	DOWN
PEEKSKILL	001F01	0	0	0	0	0	0	0	0	77	68	67	73				**
PORT CHESTER	001F01	0	0	0	0	0	0	0	0	0	65	73	67				**
ROCKLAND COUNTY	001F01	0	0	0	0	0	77	68	62	62	49	50	52			DOWN	DOWN
ROCKVILLE CTR	001F01	0	0	0	0	0	0	0	101	0	111	121	92			**	DOWN
RYE	001F01	0	0	0	0	0	0	0	0	61	67	74	72				UP
SOUTHAMPTON	001F01	0	0	0	0	0	48	45	32	46	38	36	36			**	DOWN
SUFFERN	001F01	0	0	0	0	0	0	0	0	51	49	52	54				**
SUFFOLK COUNTY	001F01	0	0	0	0	0	51	55	61	51	51	62	74			**	UP
SUFFOLK COUNTY	002F01	0	0	0	0	0	53	0	56	45	68	105	72			UP	UP
SUFFOLK COUNTY	011F01	0	0	0	0	0	67	0	54	52	47	51	54			DOWN	**
SUFFOLK COUNTY	023F01	0	0	0	0	0	0	0	0	0	0	52	43				**
WESTCHESTER COUN	003F01	0	0	0	0	0	0	0	0	0	36	50	43				UP
WESTCHESTER COUN	004F01	0	0	0	0	0	0	0	0	0	0	39	36				**
WESTCHESTER COUN	005F01	0	0	0	0	0	0	0	0	0	0	45	45				**
WESTCHESTER COUN	006F01	0	0	0	0	0	0	0	0	0	0	83	83				**
WHITE PLAINS	001F01	0	0	0	0	0	82	83	80	0	77	89	81			**	**
YONKERS	001F01	0	0	0	0	134	144	137	0	177	0	88	99			DOWN	DOWN

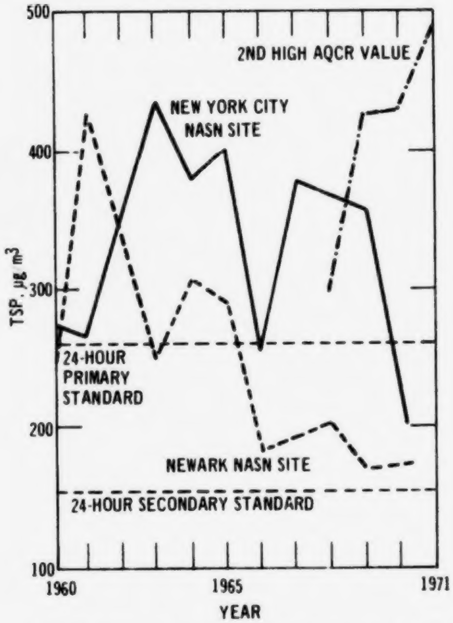


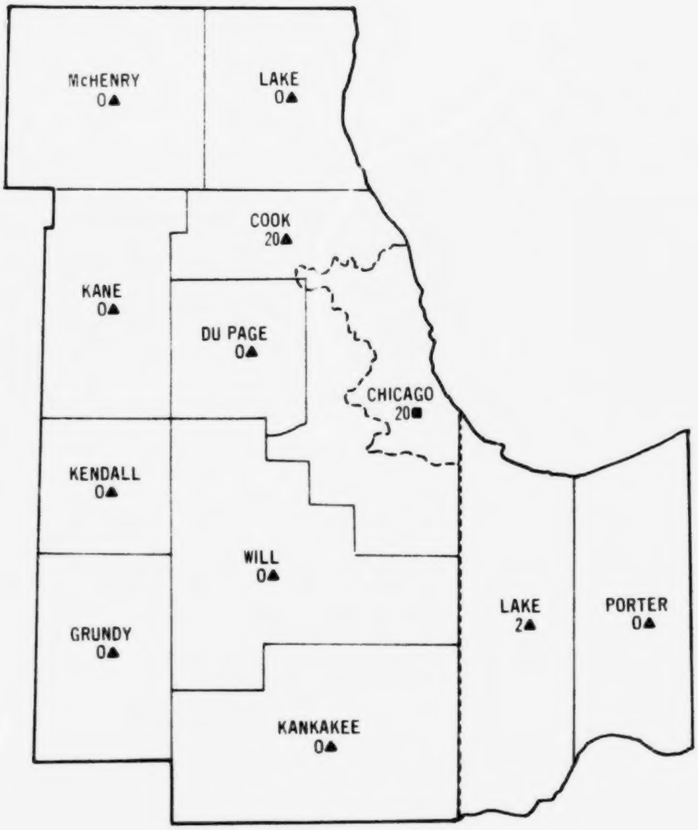
Figure 4-24. Annual TSP 99th percentile for selected NASN stations in the New Jersey-New York-Connecticut Interstate AQCR.

Table 4-23. PERCENT OF STATIONS EXCEEDING ANNUAL TSP STANDARDS IN NEW JERSEY-NEW YORK-CONNECTICUT AQCR

Year	Exceeding primary standard	Exceeding secondary standard
1968	44	61
1969	37	67
1970	52	72
1971	36	69

Table 4-24. PERCENT OF STATIONS WITH 99th PERCENTILE VALUES EXCEEDING 24-hour TSP STANDARDS IN NEW JERSEY-NEW YORK-CONNECTICUT AQCR

Year	Exceeding primary standard	Exceeding secondary standard
1968	17	67
1969	18	67
1970	20	88
1971	14	67


McHENRY
0▲
LAKE
0▲
COOK
20▲
KANE
0▲
DU PAGE
0▲
CHICAGO
20■
KENDALL
0▲
WILL
0▲
LAKE
2▲
PORTER
0▲
GRUNDY
0▲
KANKAKEE
0▲

▲ INDICATES NUMBER OF SULFUR DIOXIDE SITES WITHIN THE COUNTY.

■ INDICATES NUMBER OF SULFUR DIOXIDE SITES WITHIN CITY OF CHICAGO

TOTAL SO_2 STATIONS: 22

Figure 4-25. Metropolitan Chicago AQCR.

the maximum AQCR value met the 24-hour primary standard for sulfur dioxide. Tables 4-27 and 4-28 further demonstrate the improvement of this Region with respect to the 24-hour and annual sulfur dioxide standards. Not only were these primary standards achieved by all sites in 1971, but there was also definite and consistent improvement with respect to the secondary standards.

Table 4-25. TSP TRENDS FOR MONITORING STATIONS IN THE METROPOLITAN CHICAGO AQCR, 1964-1971

														SULFUR DIOXIDE					
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
LOCATION :		B				C				B				C				B : C	C
		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
67 METROPOLITAN CHICAGO (ILL-IND)																			
ILLINOIS																			
CHICAGO	002A01	0	0	0	0	174	184	120	73	0	0	0	0	125	114	48	37		DOWN
CHICAGO	003H01	0	79	89	68	41	26	55	32	0	47	51	41	22	13	32	21	DOWN	UP
CHICAGO	004H01	0	206	168	140	91	79	99	64	0	160	111	94	34	36	64	46	DOWN	UP
CHICAGO	005H01	0	267	183	214	138	142	134	58	0	155	121	110	56	79	77	41	DOWN	DOWN
CHICAGO	006H01	0	204	230	0	115	74	19	40	0	165	164	0	66	26	13	32	DOWN	DOWN
CHICAGO	007H01	0	122	131	98	73	58	58	33	0	84	85	65	38	39	43	21	DOWN	DOWN
CHICAGO	008H01	0	236	225	171	137	102	136	0	0	150	125	95	68	43	87	0	DOWN	UP
CHICAGO	009H01	0	70	93	98	78	36	17	30	0	45	59	53	30	10	11	19	DOWN	DOWN
CHICAGO	010H01	0	52	102	60	13	35	60	30	0	34	74	29	8	18	41	24	DOWN	UP
CHICAGO	011H01	0	96	73	66	34	34	63	43	0	59	45	41	19	16	41	35	DOWN	UP
CHICAGO	012H01	0	201	138	60	90	76	156	71	0	136	56	24	33	33	97	43	DOWN	UP
CHICAGO	013H01	0	184	161	0	90	67	107	43	0	138	112	0	42	37	64	23	DOWN	DOWN
CHICAGO	015H01	0	112	109	0	62	77	82	59	0	81	74	0	30	45	60	47	DOWN	UP
CHICAGO	016H01	0	87	137	122	60	40	16	27	0	68	95	82	27	18	11	22	DOWN	DOWN
CHICAGO	017H01	0	53	83	67	42	14	18	15	0	33	54	40	17	8	12	10	DOWN	DOWN
CHICAGO	018H01	0	83	97	68	56	69	74	58	0	55	70	48	28	47	54	42	DOWN	UP
CHICAGO	019H01	0	60	96	60	44	65	61	44	0	36	63	35	19	37	45	29	DOWN	UP
CHICAGO	020H01	0	188	183	153	101	107	33	40	0	146	112	100	42	62	19	31	DOWN	DOWN
CHICAGO	021H01	0	101	148	116	62	126	98	35	0	73	95	66	31	68	52	26	DOWN	WILD
CHICAGO	022H01	0	0	0	0	0	0	59	74	0	0	0	0	0	0	41	54		**
INDIANA																			
EAST CHICAGO	001A01	0	0	105	117	75	98	57	0	0	0	73	83	56	72	33	0	DOWN	DOWN
HAMMOND	001A01	0	0	0	0	0	95	58	32	0	0	0	0	0	53	29	20		DOWN

Table 4-26. NUMBER OF STATIONS SHOWING TRENDS IN SO_2 ANNUAL MEANS IN METROPOLITAN CHICAGO AQCR

Trend	Time period	
	1964-1971	1968-1971
Up	0	9
Down	19	11
No change	0	1
Indeterminant	0	1
Total	19	22

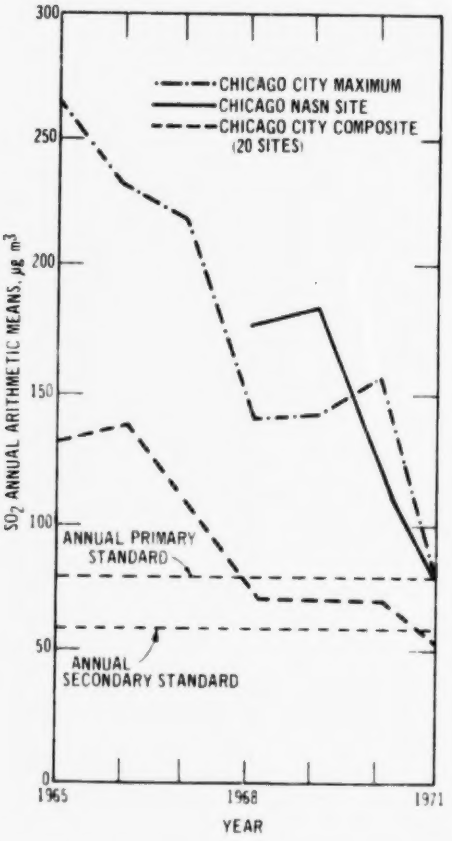


Figure 4-26. Annual arithmetic means for SO_2 in the metropolitan Chicago AQCR.

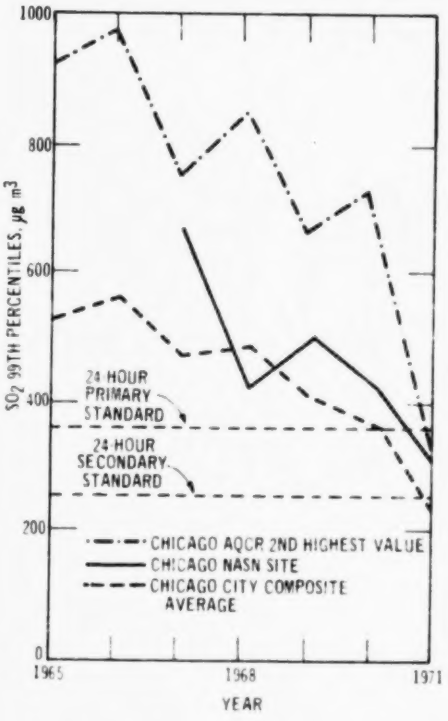


Figure 4-27. 99th percentile values for SO_2 in the metropolitan Chicago AQCR.

Table 4-27. PERCENT OF STATIONS EXCEEDING ANNUAL SULFUR DIOXIDE STANDARDS IN METROPOLITAN CHICAGO AQCR

Year	Exceeding primary standard	Exceeding secondary standard
1968	40	65
1969	33	67
1970	37	50
1971	0	20

Table 4-28. PERCENT OF STATIONS WITH 99th PERCENTILE VALUES EXCEEDING 24-hour SULFUR DIOXIDE STANDARDS IN METROPOLITAN CHICAGO AQCR

Year	Exceeding primary standard	Exceeding secondary standard
1968	60	85
1969	57	76
1970	41	55
1971	0	29

APPENDIX A.
NATIONAL PRIMARY AND SECONDARY AMBIENT AIR QUALITY STANDARDS

NOTE

The National Ambient Air Quality Standards have been published in their entirety in the Federal Register (Vol. 36, No. 84, April 30, 1971). The cover sheet for that issue is included opposite this page. Should additional copies of that issue of the Federal Register be required, they may be obtained from the Superintendent of Documents, Washington, D.C. 20402.

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PART II

ENVIRONMENTAL PROTECTION AGENCY

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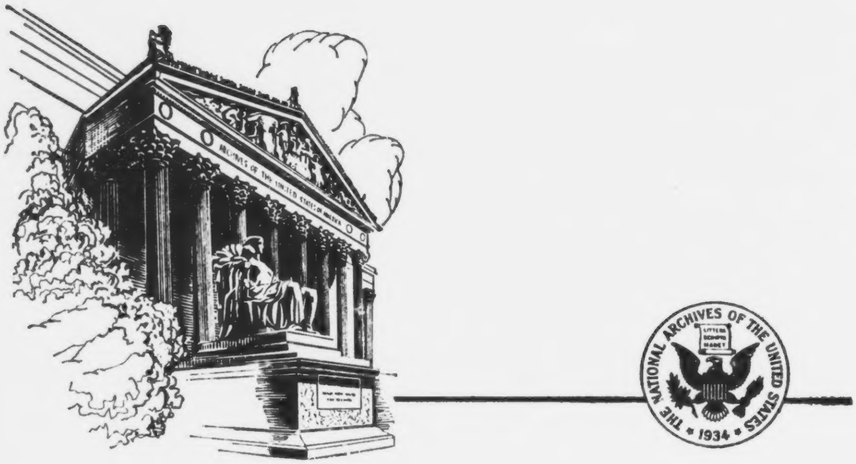
National Primary and Secondary Ambient Air Quality Standards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THE NATIONAL ARCHIVES OF THE UNITED STATES
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APPENDIX B.

REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF STATE IMPLEMENTATION PLANS

NOTE

The Requirements for Preparation, Adoption, and Submittal of Implementation Plans have been published in their entirety in the Federal Register (Vol. 36, No. 84, August 14, 1971). The cover sheet for that issue is included opposite this page. Should additional copies of that issue of the Federal Register be required, they may be obtained from the Superintendent of Documents, Washington, D.C. 20402.

federal register

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WASHINGTON, D.C.
Volume 36 ■ Number 158

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PART II

ENVIRONMENTAL PROTECTION AGENCY

■

Requirements for Preparation, Adoption, and Submittal of Implementation Plans

APPENDIX C.

AEROMETRIC AND EMISSIONS DATA SYSTEMS

Two categories of information are essential to the AQCR implementation planning process: (a) air quality data and (b) emissions data. This information, in computerized form, is stored in repositories called data banks. The overall set of programs, codes, and formats associated with storage, retrieval, and processing of the data in the banks is called a system.

C.1 STORAGE AND RETRIEVAL OF AEROMETRIC DATA

The National Aerometric Data Bank is the repository for the SAROAD system and currently contains approximately 27 million data values. These values represent measurements obtained during CAMP, NASN, and State and local agency monitoring activities since 1958.

However, since participation in NADB has been voluntary in the past, there exist large segments of data gathered by non-Federal agencies that have never been submitted. The current regulations promulgated by EPA requiring quarterly submittal of air quality data will augment the amount of data that will be available in NADB in the future. It is expected that approximately 3 million data values will be submitted quarterly beginning with the first quarter of 1973. There are two data files associated with NADB. The first contains descriptive information about the sampling site environment. The information in this file covers approximately 9000 operating and discontinued sites. The second file contains the actual raw data. The SAROAD parameter coding structure is organized so that approximately 72,000 different pollutant codes can be identified. In addition, there are codes assigned for the method of collection and analysis used with each pollutant. The sampling intervals range from 1-hour averages of continuous monitoring to monthly and quarterly composites.

The SAROAD codes and forms used with NADB are described in three EPA publications, APTD-0663, APTD-0907, and APTD-0633.

As mentioned, data have been submitted for about 9000 defined sites. In addition, "old" data collected by State, local, and Federal agencies have been incorporated into the National Aerometric Data Bank. Thus, there are considerably more sites defined as a result of previous (and, perhaps, not currently operating) monitoring activities.

C.2 NATIONAL EMISSIONS DATA SYSTEM

The National Emissions Data Bank is the repository for NEDS. The bank contains information from approximately 65,000 point sources that emit more than 100 tons per year of any of the five primary-criteria air pollutants (SO_2, particulate matter, NO_x, HC, and CO) as well as information relating to 3,300 area sources in the 50 States and Territories. For each point and area source, NEDB stores approximately 80 items of data.

NEDS was initiated in late 1971. Emissions data are calculated from appropriate parameters for individual sources and from the application of emission factors derived from representative source tests. For this reason, approximately 900 source categories have been defined and coupled with emissions factors for each of the pollutants considered. The characteristics of control equipment at the source site must also be incorporated into the emissions calculations since estimated emissions are dependent upon control efficiency.

The NEDS codes and coding forms used in the NEDB are described in an EPA publication, APTD-1135 (Revised).

APPENDIX D.
MAJOR DETERMINANTS OF AIR QUALITY

D.1 INTRODUCTION

Air quality levels often vary in both space and time. Knowledge of these variations, their significance, and their causes is essential to properly interpret air quality data. The principal reasons for air quality variations can be grouped into three broad categories: (a) land use and emissions patterns, (b) weather and topography, and (c) atmospheric reactions and removal processes. The degree to which these variations are detected and quantified depends, in large part, on the adequacy of coverage and the representativeness of monitoring sites within an AQCR. (Representativeness is the effect of sampler placement on the usability of the measurements.) In terms of coverage and representativeness, available pollutant measurements for many AQCR's are inadequate for comprehensive air quality and trend analyses; however, progress is being made toward enhancing the quantity, quality, and uniformity of data as monitoring operations are upgraded to meet the requirements of the AQCR implementation planning process.

D.2 LAND USE AND EMISSIONS PATTERNS

The basic determinant of air quality is the pattern of emissions resulting from various activities associated with the use of particular land areas. The various types of land use are usually classified according to the following principal categories: residential, commercial, industrial, agricultural, and open space. Densities and relative distributions of the above uses determine whether a given land area should be broadly identified as predominantly urban, suburban, or rural. It is quite clear how the nature of land use can determine emission patterns. For example, significant emissions of particulate matter and sulfur oxides are likely to occur in industrial areas while carbon monoxide and hydrocarbon emissions tend to be greatest in center-city, high-traffic density areas.

Many time-variant characteristics of emissions can be related to land use. Urban growth patterns, changing technology, and the growing tendency toward more stringent emission controls all have an effect on relatively long-term air quality trends. On a short-term basis, the influence of cyclic factors tends to predominate. Seasonal and diurnal fluctuations in emissions, such as those of sulfur oxides resulting from the combustion of sulfur-containing fuels during the space heating season, as well as weekly and daily working activity cycles, contribute significantly to the observed short-term air quality variations.

It is virtually impossible to characterize, on the basis of data obtained at a single sampling site, the air quality of an area with diverse land uses and changing emission patterns. For example, early NASN stations were frequently sited in center-city locations. At that time, it was believed that these locations were those which best represented the areas with the most significant air pollution problems. Since then, the central portions of most cities have not grown as rapidly as suburban and peripheral, industralized sections and their former characters have changed. Therefore, data from NASN stations do not always represent the generally higher levels of air pollutant concentrations that occur in such areas or in the AQCR's in which the stations are located.

D.3 WEATHER AND TOPOGRAPHY

Transport and dispersion of air pollutants are determined by meteorological factors such as wind direction, wind speed, and atmospheric turbulence. Some pollutants undergo reactive transformations to form secondary pollutant compounds when acted upon by sunshine, temperature, humidity, and other weather factors. The transport, dispersive, and reactive factors are, in turn, modified by the extent and configuration of terrain irregularities such as hills, valleys, shorelines, and manmade features. Existing meteorological conditions and local topography play important roles in determining the pattern of air quality in a given area.

Over a period such as a season or year, a variety of weather conditions occur that tend to form patterns that are characteristic of an area and that reflect its geography, terrain, and man-made features. Different years and the same seasons of different years are usually characterized by similar weather patterns. Accordingly, a knowledge of emissions and climatological patterns for an area provides a useful indication of local air quality.

Mathematical dispersion models, combining emissions and climatological information, have been developed to estimate air quality patterns. These estimates have usually been in reasonably close agreement with measured values. Such models have proven useful in extending knowledge of air quality distribution in an area.

Although climatology varies with immediate locale, there are certain similarities and differences that characterize the meteorological patterns of different regions of the United States. Important climatological parameters that affect the air pollution potential across the country are: (a) frequency of low-level inversion (stable air), (b) morning and afternoon depths of vertical mixing, and (c) frequency of light winds. The annual average isopleths of these parameters for the contiguous United States are shown in Figures D-1, D-2, D-3, and D-4. These isopleths indirectly reflect the influence of major topographic features such as the principal mountain chains, lakes, and oceans. The distribution of an additional parameter important to the formation of photochemical oxidants is sunshine, which is depicted by the isopleth map of mean daily solar radiation shown in Figure D-5.

Seasonal and daily weather factors affecting dispersion and reactivity of pollutants contribute significantly to the variations in air quality at particular monitoring sites. In certain situations, short-term cyclic emissions and meteorological patterns combine to cause peak concentration levels. The classic case is that of the morning peak (between 7:00 a.m. and 10:00 a.m.) in concentrations of primary pollutants due to heavy traffic and electric power requirements. This peak coincides with the time of day when urban mixing heights and wind speeds, which determine the ventilation rate, are usually near the minima of their diurnal cycle.

D.4 ATMOSPHERIC REACTIONS AND REMOVAL PROCESSES

The pollutants for which NAAQS have been established are classified as reactive or nonreactive by the degree of their chemical stability. Particulate matter and carbon monoxide undergo relatively slow chemical changes while sulfur oxides, nitrogen oxides, hydrocarbons, and photochemical oxidants (particularly during certain weather conditions) undergo more rapid transformations. In the case of reactive transformations, the pollutants emitted from sources are termed primary pollutants and those formed in the atmosphere from reactive activity are termed secondary.

Nitrogen oxide and hydrocarbon (nonmethane) emissions, emanating principally from automobiles, react in the presence of sunlight to form photochemical smog. The photochemical reaction rates are relatively rapid with significant transformations occurring within minutes to a few hours. In large urban areas with photochemical smog problems, early morning nitrogen oxides and hydrocarbon concentrations often

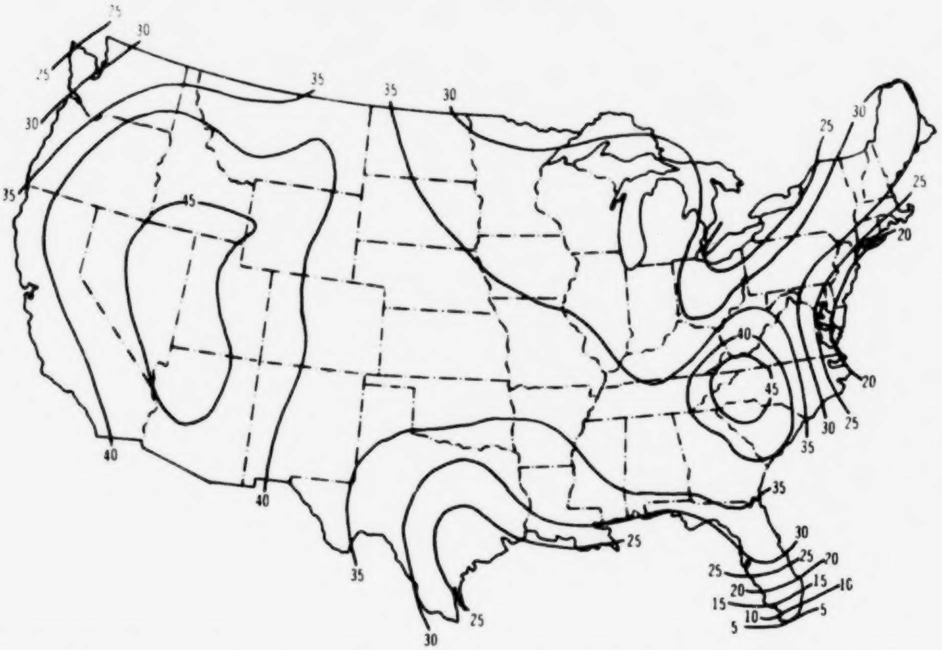
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Figure D-1. Mean annual inversion frequency (percent of total hours with inversions based 150 meters or less above ground).

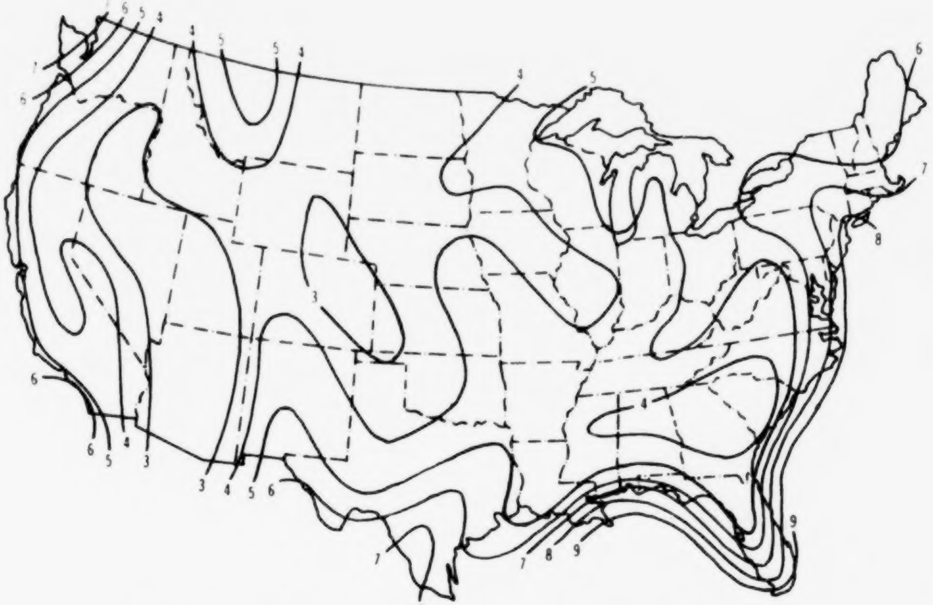
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Figure D-2. Isopleths (m x 10^2) of mean annual morning mixing heights.

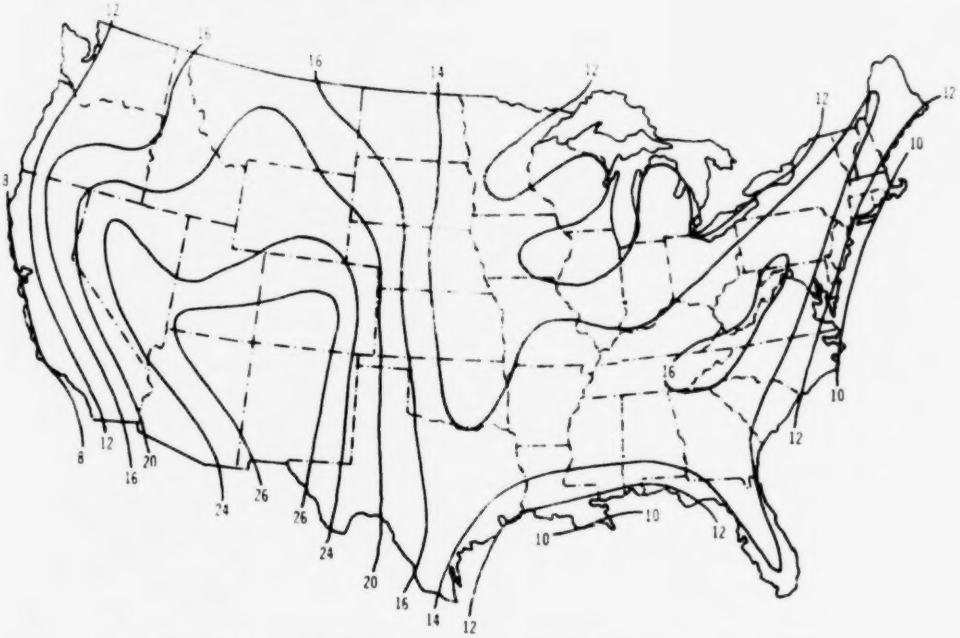
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Figure D-3. Isopleths (m x 10^2) of mean annual afternoon mixing heights.

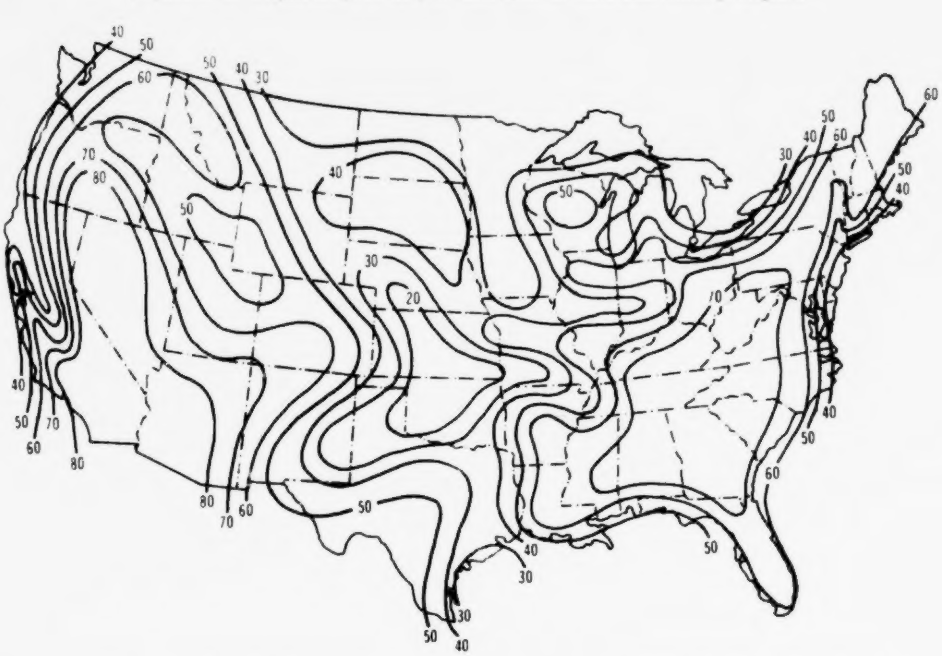
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Figure D-4. Mean annual frequency (% of nighttime hours) of nocturnal hourly surface wind observations ≤ 7 miles per hour (3.1 m/sec).

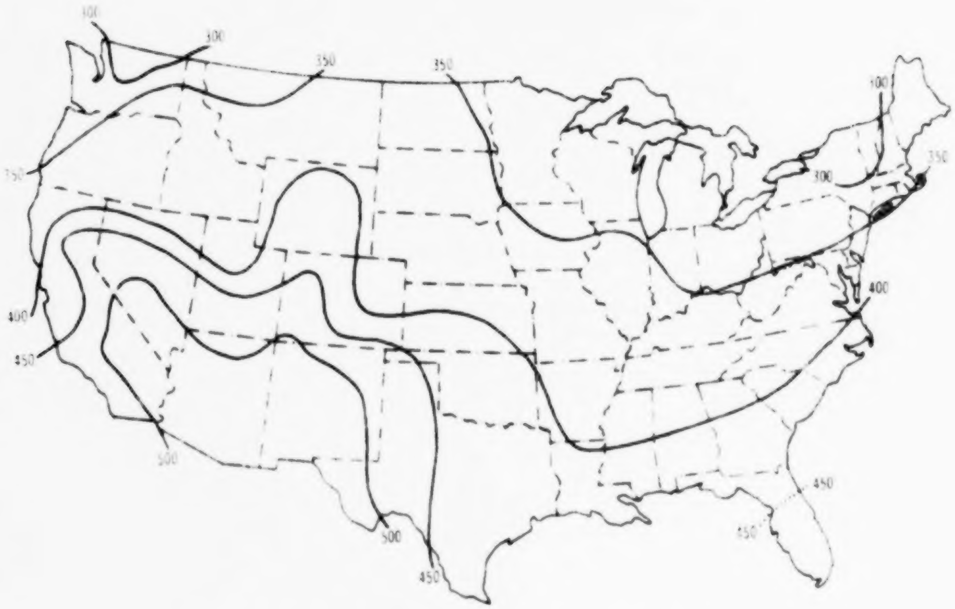
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Figure D-5. Mean daily solar radiation (langleys) annual.

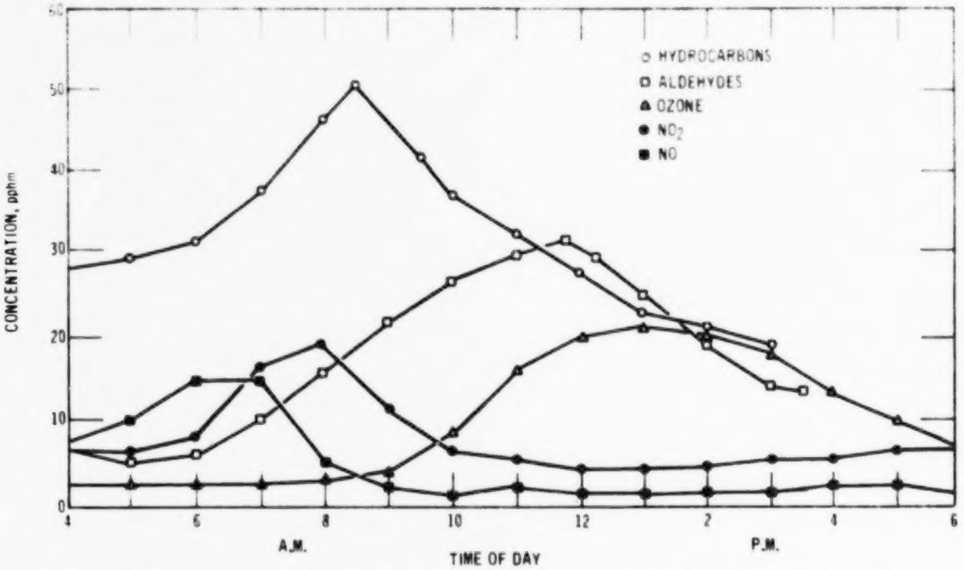

Figure D-6. Average concentrations during days of eye irritation in downtown Los Angeles (hydrocarbons, aldehydes, and ozone for 1953-1954; nitric oxide and nitrogen dioxide for 1958).

show a positive correlation with [illegible] oxidant peak concentrations. [illegible] this correlation is shown for Los Angeles in Figure [illegible].

The principal mechanisms by which contaminants are removed from the atmosphere are: (1) deposition and (2) conversion to normal atmospheric constituents. Chemical reactions can facilitate both processes. Without these removal mechanisms, pollutants would accumulate in the atmosphere and reach intolerable concentrations. Deposition occurs through gravitational settling of particles, diffusion to the surface, impaction, and through the scavenging effects of rainfall. Rainfall removal includes the physical mechanisms of absorption, coagulation, and washout by interception.

Some contaminants which are removed from the atmosphere can also be reintroduced. Man-made and natural dusts can become airborne due to lack of soil moisture and to wind action. In the Southwest, many measurements indicate that suspended particulate concentrations are high with respect to known particulate source emissions in their vicinity. The aridness of these site areas contributes to these observations. Dusts are generated from disturbed dry soil even during light winds. Strong winds augment this effect.

D5 REPRESENTATIVENESS OF AIR QUALITY MEASUREMENTS

Most available air quality data are derived from measurements taken at urban sites. Data collected at a specific urban site do not necessarily accurately reflect urban air quality in the general vicinity of the site unless interfering local influences are eliminated or minimized. Frequently, such influences are transient (e.g., effects of local construction).

Sensor elevation can significantly affect air quality measurements. To date, standardized criteria for sampling heights have not been available. Measurements are now often made at roof level where pollutant concentrations may be higher or lower than actual representative levels according to the relative height of nearby emission sources.

The pollutant being sampled is important to the representativeness of a site. Because of such factors as source distribution, source height, reactivity, and removal processes, a site that is suitable for one pollutant may not provide representative data for another. For example, a monitoring site intended for sampling a primary automotive-related pollutant (CO, HC, NO, NO_2) should be located near a busy roadway or intersection in order to sense maximum concentrations. On the other hand, sampling for a related secondary pollutant (O_x, NO_2) should be performed some distance downwind depending on dispersive and reactive rates. For these reasons, measurements of several pollutants at a single station are not likely to provide suitably representative samples for all pollutants. Multiple pollutant monitoring at a single site, however, does provide useful data for studies of synergistic effects.

The degree to which an air quality network provides a reliable measure of the distribution of pollutant concentration over an area depends mainly on sampler spacing and local topography. EPA is preparing general guidelines for developing air quality surveillance networks that outline the factors to consider in sampler placement. These and more comprehensive sampler placement guidelines being developed by EPA should greatly enhance the representativeness of future air quality measurements.

APPENDIX E.

INVENTORY OF AIR QUALITY MONITORING STATIONS

Three sets of tables are presented in Appendix E. Tables E-1 through E-6 are State listings, by pollutant/method, of current, required, and proposed monitoring stations. These tables also identify the number of stations contained in the National Aerometric Data Bank that have valid or invalid annual data. Table E-7 summarizes current, required, and proposed stations for each pollutant/method by State, and Tables E-8 through E-16 present, by State, the number of existing Federal, State, and local stations having valid and invalid annual data.

Table E-1. STATE INVENTORY OF STATIONS MONITORING SUSPENDED PARTICULATES WITH TAPE SAMPLER, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	5	16	16	1	0	1
Alaska	0	2	2	0	0	0
Arizona	7	8	11	0	0	0
Arkansas	0	2	5	0	0	0
California	0	22	53	37	15	22
Colorado	4	7	14	0	0	0
Connecticut	39	10	39	3	0	3
Delaware	14	1	20	0	0	0
D.C.	7	2	10	9	0	9
Florida	*[b]	14	13	1	0	1
Georgia	5	17	23	0	0	0
Hawaii	1	1	3	0	0	0
Idaho	0	3	4	0	0	0
Illinois	22	19	34	0	0	0
Indiana	24	15	43	0	0	0
Iowa	1	10	12	0	0	0
Kansas	1	8	10	1	1	0
Kentucky	17	11	32	0	0	0
Louisiana	*	2	3	0	0	0
Maine	1	3	4	0	0	0
Maryland	16	14	25	0	0	0
Massachusetts	12	16	21	0	0	0
Michigan	1	12	29	0	0	0
Minnesota	22	12	23	0	0	0
Mississippi	0	6	6	0	0	0
Missouri	15	14	20	8	0	8
Montana	1	3	3	0	0	0
Nebraska	3	3	4	0	0	0
Nevada	2	3	4	0	0	0
New Hampshire	0	2	6	0	0	0
New Jersey	22	5	22	9	9	0
New Mexico	2	3	9	2	1	1
New York	47	25	57	23	6	17
North Carolina	*	17	45	0	0	0
North Dakota	0	2	2	0	0	0
Ohio	12	32	41	12	0	12
Oklahoma	3	7	10	1	0	1
Oregon	5	9	9	0	0	0
Pennsylvania	15	35	60	0	0	0
Puerto Rico	0	1	7	0	0	0
Rhode Island	0	4	4	1	0	1
South Carolina	3	8	10	0	0	0
South Dakota	0	1	1	0	0	0
Tennessee	4	16	16	1	1	0
Texas	3	20	25	0	0	0
Utah	5	3	5	0	0	0
Vermont	1	1	2	0	0	0
Virginia	11	20	23	2	0	2
Washington	18	14	19	3	0	3
West Virginia	22	5	24	0	0	0
Wisconsin	3	10	12	0	0	0
Wyoming	0	2	2	0	0	0
American Samoa	0	0	0	0	0	0
Guam	0	0	1	0	0	0
Virgin Islands	1	1	1	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * = No data specified in SIP

Table E-2. STATE INVENTORY OF STATIONS MONITORING TOTAL SUSPENDED PARTICULATES WITH HI-VOL SAMPLER, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	60	37	38	16	9	7
Alaska	6	11	28	2	1	1
Arizona	33	16	35	29	3	26
Arkansas	16	9	29	4	2	2
California	70	66	102	19	13	6
Colorado	55	27	66	73	59	14
Connecticut	60	19	67	20	4	16
Delaware	14	3	20	3	1	2
D.C.	7	4	10	8	2	6
Florida	*[b]	30	30	24	13	11
Georgia	40	43	56	3	3	0
Hawaii	7	3	12	4	2	2
Idaho	27	15	35	2	2	0
Illinois	114	56	125	39	25	14
Indiana	94	45	124	58	24	34
Iowa	31	33	43	18	6	12
Kansas	34	34	59	38	28	10
Kentucky	78	30	165	5	5	0
Louisiana	*	5	9	3	3	0
Maine	6	13	22	2	2	0
Maryland	62	31	74	16	0	16
Massachusetts	46	34	63	50	10	40
Michigan	80	29	127	82	47	35
Minnesota	68	27	68	4	2	2
Mississippi	17	11	29	2	0	2
Missouri	68	30	75	31	3	28
Montana	7	13	14	2	1	1
Nebraska	29	12	29	26	13	13
Nevada	34	13	34	3	0	3
New Hampshire	25	8	32	3	3	0
New Jersey	50	19	50	10	4	6
New Mexico	42	16	52	37	9	28
New York	230	66	336	206	157	49
North Carolina	*	54	165	104	85	19
North Dakota	15	6	15	2	1	1
Ohio	202	78	255	77	47	30
Oklahoma	79	24	98	111	30	81
Oregon	64	20	27	4	0	4
Pennsylvania	81	68	116	22	12	10
Puerto Rico	4	3	22	5	2	3
Rhode Island	18	7	25	23	19	4
South Carolina	55	40	68	3	2	1
South Dakota	2	6	6	2	2	0
Tennessee	92	39	96	20	6	14
Texas	140	55	221	63	7	56
Utah	8	11	19	2	1	1
Vermont	7	4	10	2	1	1
Virginia	73	55	108	112	26	86
Washington	71	31	72	48	9	39
West Virginia	34	24	37	3	2	1
Wisconsin	71	24	74	118	28	90
Wyoming	6	7	10	4	3	1
American Samoa	0	1	1	0	0	0
Guam	0	1	2	0	0	0
Virgin Islands	6	3	6	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * = No data specified in SIP

Table E-3. STATE INVENTORY OF STATIONS MONITORING SO_2 WITH CONTINUOUS SAMPLING METHOD, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	0	3	4	0	0	0
Alaska	0	1	1	0	0	0
Arizona	7	5	12	0	0	0
Arkansas	0	0	0	0	0	0
California	20	2	23	14	12	2
Colorado	2	0	7	1	0	1
Connecticut	19	5	24	1	0	1
Delaware	14	1	20	0	0	0
D.C.	3	1	6	2	1	1
Florida	*[b]	5	6	3	0	3
Georgia	4	10	11	0	0	0
Hawaii	1	0	1	0	0	0
Idaho	4	1	3	0	0	0
Illinois	26	16	32	3	0	3
Indiana	18	10	32	0	0	0
Iowa	1	1	3	0	0	0
Kansas	0	0	2	0	0	0
Kentucky	12	3	23	0	0	0
Louisiana	*	5	6	0	0	0
Maine	2	3	3	0	0	0
Maryland	17	8	26	8	0	8
Massachusetts	8	9	22	2	0	2
Michigan	16	8	27	0	0	0
Minnesota	7	6	12	0	0	0
Mississippi	0	2	4	0	0	0
Missouri	7	4	11	14	1	13
Montana	2	3	4	0	0	0
Nebraska	0	1	1	1	0	1
Nevada	0	2	2	0	0	0
New Hampshire	0	2	4	0	0	0
New Jersey	21	7	22	10	10	0
New Mexico	3	1	5	0	0	0
New York	45	19	79	8	0	8
North Carolina	*	1	0	0	0	0
North Dakota	0	0	0	0	0	0
Ohio	13	15	46	8	0	8
Oklahoma	0	0	3	0	0	0
Oregon	1	1	1	0	0	0
Pennsylvania	17	14	59	1	0	1
Puerto Rico	0	1	19	0	0	0
Rhode Island	0	2	4	1	0	1
South Carolina	2	3	6	0	0	0
South Dakota	0	0	0	0	0	0
Tennessee	2	4	6	0	0	0
Texas	*	12	61	0	0	0
Utah	5	2	6	0	0	0
Vermont	2	1	6	0	0	0
Virginia	2	5	9	2	0	2
Washington	22	3	21	5	1	4
West Virginia	0	2	2	0	0	0
Wisconsin	4	1	9	3	0	3
Wyoming	0	0	0	0	0	0
American Samoa	0	0	0	0	0	0
Guam	0	1	1	0	0	0
Virgin Islands	0	1	1	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * = No data specified in SIP

Table E-4. STATE INVENTORY OF STATIONS MONITORING SO_2 WITH WEST-GAEKE COLORIMETRIC 24-hour METHOD, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	1	14	15	3	2	1
Alaska	1	6	6	1	0	1
Arizona	4	13	5	4	1	3
Arkansas	1	4	6	2	0	2
California	20	15	17	16	3	13
Colorado	1	8	7	2	0	2
Connecticut	5	12	11	4	2	2
Delaware	10	2	16	3	2	1
D.C.	0	3	0	2	0	2
Florida	*[b]	16	16	24	7	17
Georgia	11	26	29	3	3	0
Hawaii	5	1	8	4	0	4
Idaho	0	6	8	0	0	0
Illinois	29	37	50	27	19	8
Indiana	43	28	89	16	8	8
Iowa	4	12	13	2	1	1
Kansas	8	6	36	11	5	6
Kentucky	60	14	150	4	1	3
Louisiana	*	10	13	4	3	1
Maine	5	10	22	1	1	0
Maryland	24	21	38	9	1	8
Massachusetts	46	21	65	6	2	4
Michigan	6	18	[illegible]	9	3	6
Minnesota	15	16	20	3	1	2
Mississippi	1	7	15	2	0	2
Missouri	6	11	6	4	3	1
Montana	2	11	[illegible]	1	0	1
Nebraska	1	6	6	3	1	2
Nevada	6	6	[illegible]	1	1	0
New Hampshire	4	7	11	8	2	6
New Jersey	0	13	3	0	0	0
New Mexico	6	8	22	3	0	3
New York	6	39	11	34	20	14
North Carolina	*	10	111	23	2	21
North Dakota	1	2	2	0	0	0
Ohio	35	40	94	21	15	6
Oklahoma	8	7	11	14	2	12
Oregon	5	6	7	1	0	1
Pennsylvania	0	28	0	16	6	10
Puerto Rico	1	3	3	4	1	3
Rhode Island	18	5	21	16	1	15
South Carolina	20	17	39	1	1	0
South Dakota	0	4	4	1	0	1
Tennessee	5	14	45	5	1	4
Texas	51	37	171	28	2	26
Utah	4	9	15	1	0	1
Vermont	1	4	3	0	0	0
Virginia	23	17	47	18	5	13
Washington	0	11	4	4	1	3
West Virginia	13	10	21	1	1	0
Wisconsin	22	8	30	3	1	2
Wyoming	1	3	3	2	0	2
American Samoa	0	1	1	0	0	0
Guam	0	3	3	0	0	0
Virgin Islands	2	3	3	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * = No data specified in SIP.

Table E-5. STATE INVENTORY OF STATIONS MONITORING CO WITH CONTINUOUS SAMPLING METHOD, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	1	3	3	1	0	1
Alaska	0	1	1	0	0	0
Arizona	2	3	4	0	0	0
Arkansas	0	0	0	0	0	0
California	44	29	57	29	23	6
Colorado	1	3	6	1	0	1
Connecticut	2	5	6	0	0	0
Delaware	4	1	4	0	0	0
D.C.	2	1	5	6	1	5
Florida	*[b]	0	0	2	0	2
Georgia	3	0	3	0	0	0
Hawaii	1	0	2	0	0	0
Idaho	0	0	0	0	0	0
Illinois	9	10	16	1	0	1
Indiana	0	4	7	2	0	2
Iowa	1	0	1	2	0	2
Kansas	3	1	5	1	0	1
Kentucky	3	0	14	1	0	1
Louisiana	*	0	0	1	0	1
Maine	0	0	0	0	0	0
Maryland	12	6	20	2	0	2
Massachusetts	3	6	11	3	0	3
Michigan	0	0	10	0	0	0
Minnesota	4	4	4	0	0	0
Mississippi	0	0	0	0	0	0
Missouri	10	6	13	10	1	9
Montana	0	0	0	0	0	0
Nebraska	0	0	0	1	0	1
Nevada	1	2	2	0	0	0
New Hampshire	0	0	2	0	0	0
New Jersey	22	8	22	10	8	2
New Mexico	2	1	3	4	1	3
New York	22	13	29	12	5	7
North Carolina	*	0	4	1	0	1
North Dakota	0	0	0	0	0	0
Ohio	4	0	24	11	0	11
Oklahoma	3	0	4	4	0	4
Oregon	3	3	4	0	0	0
Pennsylvania	12	11	50	2	0	2
Puerto Rico	0	0	1	0	0	0
Rhode Island	0	0	4	2	0	2
South Carolina	0	0	0	0	0	0
South Dakota	0	0	0	0	0	0
Tennessee	4	0	5	4	0	4
Texas	*	1	79	6	0	6
Utah	4	2	5	0	0	0
Vermont	1	0	1	0	0	0
Virginia	3	2	7	5	0	5
Washington	9	7	9	0	0	0
West Virginia	1	0	1	0	0	0
Wisconsin	1	0	9	2	0	2
Wyoming	0	0	0	0	0	0
American Samoa	0	0	0	0	0	0
Guam	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * - No data specified in SIP

Table E-6. STATE INVENTORY OF STATIONS MONITORING TOTAL O_x AND O_3 WITH CONTINUOUS SAMPLING METHOD, 1971

State	Stations listed in SIP			Stations listed in NADB		
	Current 1971	Minimum required for 1974	Proposed for 1974	Total	Valid	Invalid[a]
Alabama	1	4	4	1	0	1
Alaska	0	0	0	0	0	0
Arizona	2	3	3	0	0	0
Arkansas	0	0	0	0	0	0
California	68	32	81	30	24	6
Colorado	1	3	6	2	0	2
Connecticut	3	5	7	0	0	0
Delaware	4	1	4	0	0	0
D.C.	1	1	2	3	1	2
Florida	*[b]	4	3	4	0	4
Georgia	1	1	1	0	0	0
Hawaii	1	0	2	0	0	0
Idaho	0	0	0	0	0	0
Illinois	6	10	12	1	1	0
Indiana	0	4	7	2	0	2
Iowa	1	2	2	2	0	2
Kansas	1	3	5	2	0	2
Kentucky	3	3	12	2	0	2
Louisiana	*	5	6	1	0	1
Maine	0	0	0	0	0	0
Maryland	13	6	19	2	0	2
Massachusetts	3	6	12	2	0	2
Michigan	0	0	5	0	0	0
Minnesota	3	0	5	0	0	0
Mississippi	0	2	3	0	0	0
Missouri	9	6	13	10	1	9
Montana	0	0	0	0	0	0
Nebraska	0	0	0	1	0	1
Nevada	2	2	3	0	0	0
New Hampshire	0	0	1	0	0	0
New Jersey	4	7	7	3	3	0
New Mexico	2	3	3	1	0	1
New York	9	16	23	18	0	18
North Carolina	*	2	5	1	0	1
North Dakota	0	0	0	0	0	0
Ohio	5	16	24	13	0	13
Oklahoma	2	4	4	3	0	3
Oregon	2	3	3	0	0	0
Pennsylvania	7	11	44	2	0	2
Puerto Rico	0	0	0	0	0	0
Rhode Island	0	0	4	0	0	0
South Carolina	0	1	1	0	0	0
South Dakota	0	0	0	0	0	0
Tennessee	4	5	7	4	0	4
Texas	*	19	81	6	0	6
Utah	4	2	5	0	0	0
Vermont	1	0	1	0	0	0
Virginia	4	7	7	8	0	8
Washington	7	5	7	0	0	0
West Virginia	3	0	3	0	0	0
Wisconsin	6	4	11	2	0	2
Wyoming	0	0	0	0	0	0
American Samoa	0	0	0	0	0	0
Guam	0	0	0	0	0	0
Virgin Islands	0	0	0	0	0	0

[a] Invalid because of insufficient data for statistical calculations.

[b] * = No data specified in SIP.

Table E-7. SIP INVENTORY OF REQUIRED, PROPOSED, AND EXISTING MONITORING STATIONS, BY POLLUTANT AND METHOD

	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANTS			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CUNT		
STATE	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
ALABAMA	37	38	60	16	16	5	14	15	1	3	4	0	3	3	1	4	4	1	0	0	1	0	0	0
ALASKA	11	28	6	2	2	0	6	6	1	1	1	0	1	1	0	0	0	0	0	2	1	0	0	0
ARIZONA	16	35	33	8	11	7	13	5	4	5	12	7	3	4	2	3	3	2	11	12	4	0	1	1
ARKANSAS	9	29	16	2	5	0	4	6	1	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
CALIFORNIA	66	102	70	22	53	0	15	17	20	2	23	20	29	57	44	32	81	68	30	12	0	0	54	50
COLORADO	27	66	55	7	17	4	8	7	1	0	7	2	3	6	1	3	6	1	0	0	0	0	6	1
CONNECTICUT	19	67	60	10	39	39	12	11	5	5	24	19	5	6	2	5	7	3	10	22	0	0	2	2
DELAWARE	3	20	14	1	20	14	2	16	10	1	20	14	1	4	4	1	4	4	1	20	14	0	4	4
DIST COLUMBIA	4	10	7	2	10	7	3	0	0	1	6	*	1	5	2	1	2	1	3	0	0	0	4	2
FLORIDA	30	30	*	14	13	*	16	16	*	5	6	*	0	0	*	4	3	*	20	20	*	0	0	*
GEORGIA	43	56	40	17	23	5	26	29	11	10	11	4	0	3	3	1	1	1	15	16	6	0	1	1
HAWAII	3	12	7	1	3	1	1	8	5	0	1	1	0	2	1	0	2	1	0	9	5	0	0	0
IDAHO	15	35	27	3	4	0	6	8	0	1	3	4	0	0	0	0	0	0	0	0	0	0	0	0
ILLINOIS	56	125	114	19	34	22	37	50	29	16	32	26	10	16	9	10	12	6	12	16	3	0	11	10
INDIANA	45	124	94	15	43	24	28	89	43	10	32	18	4	7	0	4	7	0	13	70	27	0	0	0
IOWA	33	44	31	10	12	1	12	13	4	1	3	1	0	1	1	2	2	1	2	4	2	0	0	0
KANSAS	34	59	34	8	10	1	6	36	8	0	2	0	1	5	3	3	5	1	0	35	3	0	1	0
KENTUCKY	30	165	78	11	32	17	14	150	60	3	23	12	0	14	3	3	12	3	10	160	51	0	3	2
LOUISIANA	5	9	*	2	3	*	10	13	*	5	6	*	0	0	*	5	6	*	0	0	*	0	0	*
MAINE	13	22	6	3	4	1	10	22	5	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0
MARYLAND	31	74	62	14	25	16	21	38	24	8	26	17	6	20	12	6	19	13	14	34	20	0	4	4
MASSACHUSETTS	34	63	46	16	21	12	21	66	46	9	22	8	6	11	3	6	12	3	16	62	46	0	7	0
MICHIGAN	29	127	80	12	29	1	18	36	6	8	27	16	0	10	0	0	5	0	21	36	6	0	5	1
MINNESOTA	27	68	68	12	23	22	16	20	15	6	12	7	4	4	4	0	5	3	10	10	9	0	3	3
MISSISSIPPI	11	29	17	6	6	0	7	15	1	2	4	0	0	0	0	2	3	0	0	1	0	0	0	0
MISSOURI	30	75	68	14	20	15	11	6	6	4	11	7	6	13	10	6	13	9	7	4	3	0	12	9
MONTANA	13	14	7	3	3	1	11	11	2	3	4	2	0	0	0	0	0	0	0	0	0	0	0	0
NEBRASKA	12	29	29	3	4	3	6	6	1	1	1	0	0	0	0	0	0	0	6	7	1	0	0	0
NEVADA	13	34	34	3	4	2	6	6	6	2	2	0	2	2	1	2	3	2	5	5	5	0	3	3
NEW HAMPSHIRE	9	32	25	2	6	0	7	13	4	2	4	0	0	2	0	0	1	0	0	13	1	0	0	0
NEW JERSEY	19	50	50	5	22	22	13	5	0	7	22	21	8	22	22	7	7	4	7	8	0	0	0	0
NEW MEXICO	16	52	42	3	9	2	8	22	6	1	5	3	1	3	2	3	3	2	0	18	6	0	0	0
NEW YORK	72	336	230	25	57	47	39	11	6	19	79	45	13	29	22	16	23	9	26	26	7	0	0	0
NORTH CAROLINA	54	165	*	17	45	*	10	131	*	1	0	*	0	4	*	2	5	*	0	0	*	0	0	*
NORTH DAKOTA	6	15	15	2	2	0	2	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
OHIO	78	255	202	32	41	12	40	94	35	15	46	13	0	24	4	16	24	5	45	95	32	0	34	5
OKLAHOMA	24	98	79	7	10	3	7	15	8	0	3	0	0	4	3	4	4	2	0	0	0	0	0	0
OREGON	20	27	64	9	9	5	6	7	5	1	1	1	3	4	3	3	3	2	0	4	0	0	0	1
PENNSYLVANIA	68	116	81	33	60	15	28	0	0	14	59	17	11	50	12	11	44	7	45	0	0	0	60	7
PUERTO RICO	3	22	4	1	7	0	3	3	1	1	19	0	0	1	0	0	0	0	0	19	3	0	0	0
RHODE ISLAND	7	25	18	4	4	0	5	21	18	2	4	0	0	4	0	0	4	0	6	25	18	0	0	0
SOUTH CAROLINA	40	68	55	8	10	3	17	39	20	3	6	2	0	0	0	1	1	0	0	0	0	0	0	0
SOUTH DAKOTA	6	6	2	1	1	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table E-7 (continued). SIP INVENTORY OF REQUIRED, PROPOSED, AND EXISTING MONITORING STATIONS, BY POLLUTANT AND METHOD

STATE	SUSPENDED PARTICULATES						SULFUR DIOXIDE						CARBON MONOXIDE			TOTAL OXIDANTS			NITROGEN DIOXIDE					
	HIVOL			TAPE			24HR			CONT			CONT			CONT			24HR			CONT		
	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG	REQ	PRP	ETG
TENNESSEE	39	96	92	16	16	4	14	45	5	4	6	2	0	5	4	5	7	4	11	36	16	0	2	0
TEXAS	52	221	140	20	25	3	37	171	51	12	61	0	1	79	0	19	81	0	27	0	49	0	79	0
UTAH	11	19	8	3	5	5	9	15	4	2	6	5	2	5	4	2	5	4	10	15	4	0	6	5
VERMONT	4	10	7	1	2	1	4	3	1	1	6	2	0	1	1	0	1	1	0	0	0	0	1	1
VIRGINIA	55	108	73	20	23	11	17	47	23	5	9	2	2	7	3	7	7	4	21	38	20	0	2	2
WASHINGTON	31	72	71	14	19	18	11	4	0	3	21	22	7	9	9	5	7	7	10	10	0	0	3	3
WEST VIRGINIA	24	37	34	5	24	22	10	21	13	2	2	0	0	1	1	0	3	3	0	0	0	0	0	0
WISCONSIN	24	74	71	10	12	3	8	30	22	1	9	4	0	9	1	4	11	6	10	8	7	0	6	1
WYOMING	7	10	6	2	2	0	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AMERICAN SAMOA	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUAM	1	2	0	0	1	0	3	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
VIRGIN ISLANDS	3	6	6	1	1	1	3	3	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0

Table E-8. NADB INVENTORY OF STATIONS MONITORING SUSPENDED PARTICULATES WITH GRAVIMETRIC HI-VOL METHOD, 1971

	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		
STATE NAME	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	TOTAL
ALABAMA	3	2	0	1	6	4	16
ALASKA	1	1	0	0	0	0	2
ARIZONA	3	2	0	22	0	1	28
ARKANSAS	2	2	0	0	0	0	4
CALIFORNIA	13	6	0	0	0	0	19
COLORADO	3	0	56	14	0	0	73
CONNECTICUT	4	0	0	16	0	0	20
DELAWARE	1	2	10	4	0	0	17
DIST COLUMBIA	2	0	0	0	0	6	8
FLORIDA	4	1	0	0	9	10	24
GEORGIA	3	0	0	0	0	0	3
HAWAII	2	2	0	0	0	0	4
IDAHO	2	0	10	17	0	0	29
ILLINOIS	6	5	0	0	19	23	53
INDIANA	6	8	3	26	15	0	58
IOWA	1	5	5	7	0	0	18
KANSAS	3	0	24	10	1	0	38
KENTUCKY	5	0	25	26	10	3	69
LOUISIANA	3	0	0	0	0	0	3
MAINE	2	0	0	0	0	0	2
MARYLAND	0	1	0	0	0	15	16
MASSACHUSETTS	3	2	7	37	0	0	49
MICHIGAN	6	1	17	30	24	4	82
MINNESOTA	2	2	0	0	0	0	4
MISSISSIPPI	0	2	0	0	0	0	2
MISSOURI	3	16	0	2	0	16	37
MONTANA	1	1	0	0	0	0	2
NEBRASKA	2	1	11	11	0	1	26
NEVADA	0	3	0	0	0	0	3
NEW HAMPSHIRE	3	0	0	0	0	0	3
NEW JERSEY	4	6	0	0	0	0	10
NEW MEXICO	1	1	3	19	8	6	38
NEW YORK	6	3	151	46	0	0	206

Table E-8 (continued). NADB INVENTORY OF STATIONS MONITORING SUSPENDED PARTICULATES WITH GRAVIMETRIC HI-VOL METHOD, 1971

	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		
STATE NAME	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	TOTAL
NORTH CAROLINA	1	4	0	84	0	15	104
NORTH DAKOTA	1	0	0	11	0	0	12
OHIO	10	2	0	0	52	33	97
OKLAHOMA	1	3	29	72	0	6	111
OREGON	0	3	0	1	0	0	4
PENNSYLVANIA	12	10	0	0	0	0	22
PUERTO RICO	2	3	0	0	0	0	5
RHODE ISLAND	3	1	16	3	0	0	23
SOUTH CAROLINA	2	1	0	0	0	0	3
SOUTH DAKOTA	2	0	0	0	0	0	2
TENNESSEE	2	3	0	0	4	11	20
TEXAS	7	7	0	32	0	17	63
UTAH	1	1	0	0	0	0	2
VERMONT	1	1	0	0	0	0	2
VIRGINIA	8	3	12	58	6	29	116
WASHINGTON	4	0	6	35	18	9	72
WEST VIRGINIA	2	1	0	33	0	1	37
WISCONSIN	4	3	12	63	12	24	118
WYOMING	3	1	0	0	0	0	4

Table E-9. NADB INVENTORY OF STATIONS MONITORING SO_2 WITH WEST-GAEKE COLORIMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS VALID ANNUAL DATA	NUMBER OF FEDERAL STATIONS INVALID ANNUAL DATA	NUMBER OF STATE STATIONS VALID ANNUAL DATA	NUMBER OF STATE STATIONS INVALID ANNUAL DATA	NUMBER OF LOCAL STATIONS VALID ANNUAL DATA	NUMBER OF LOCAL STATIONS INVALID ANNUAL DATA	TOTAL
ALABAMA	0	0	0	0	0	0	0
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	0	0	0	0	0	0
COLORADO	0	1	0	0	0	0	1
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	4	0	0	4
DIST COLUMBIA	1	0	0	0	0	0	1
FLORIDA	0	0	0	0	0	3	3
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	3	0	0	0	0	3
INDIANA	0	0	0	0	0	0	0
IOWA	0	0	0	0	0	0	0
KANSAS	0	0	0	0	0	0	0
KENTUCKY	0	0	0	2	0	0	2
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	0	0	1	1
MASSACHUSETTS	0	0	0	1	0	0	1
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	1	4	0	0	0	5	10
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	1	0	0	1
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	10	0	0	0	10
NEW MEXICO	0	0	0	0	0	0	0
NEW YORK	0	0	0	7	0	0	7

Table E-9 (continued). NADB INVENTORY OF STATIONS MONITORING SO_2 WITH WEST-GAEKE COLORIMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
NORTH CAROLINA	0	0	0	0	0	0	0
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	1	0	0	0	0	1
OKLAHOMA	0	0	0	0	0	0	0
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	1	0	0	0	0	1
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	1	0	0	1
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	0
TEXAS	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	0	0
WASHINGTON	0	0	0	1	0	0	1
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	0
WYOMING	0	0	0	0	0	0	0

Table E-10. NADB INVENTORY OF STATIONS MONITORING SO_2 WITH CONDUCTOMETRIC METHOD, 1971

	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		
STATE NAME	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	TOTAL
ALABAMA	0	0	0	0	0	0	0
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	0	0	0	12	2	14
COLORADO	0	0	0	0	0	0	0
CONNECTICUT	0	0	0	1	0	0	1
DELAWARE	0	0	0	6	0	0	6
DIST COLUMBIA	0	0	0	0	0	1	1
FLORIDA	0	0	0	0	0	0	0
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	0	0	0	6	2	8
INDIANA	0	0	0	0	0	0	0
IOWA	0	0	0	0	0	0	0
KANSAS	0	0	0	0	0	0	0
KENTUCKY	0	0	0	0	0	0	0
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	5	0	2	7
MASSACHUSETTS	0	0	0	1	0	0	1
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	0	3	0	0	0	1	4
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0
NEW YORK	0	0	0	0	0	1	1

Table E-10 (continued). NADB INVENTORY OF STATIONS MONITORING SO_2 WITH CONDUCTOMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS VALID ANNUAL DATA	NUMBER OF FEDERAL STATIONS INVALID ANNUAL DATA	NUMBER OF STATE STATIONS VALID ANNUAL DATA	NUMBER OF STATE STATIONS INVALID ANNUAL DATA	NUMBER OF LOCAL STATIONS VALID ANNUAL DATA	NUMBER OF LOCAL STATIONS INVALID ANNUAL DATA	TOTAL
NORTH CAROLINA	0	0	0	0	0	0	0
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	0	0	0	0	7	7
OKLAHOMA	0	0	0	0	0	0	0
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	0	0	0	0	0	0
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	0
TEXAS	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	2	2
WASHINGTON	0	0	3	2	2	6	13
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	0	0	3	0	0	3
WYOMING	0	0	0	0	0	0	0

Table E-11. NADB INVENTORY OF STATIONS MONITORING SO_2 WITH COULOMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
ALABAMA	0	0	0	1	0	0	1
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	7	0	0	7
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	0	0	0	0	0	0
COLORADO	0	0	0	0	0	0	0
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	0	0	0
DIST COLUMBIA	0	0	0	1	0	2	3
FLORIDA	0	0	0	0	0	2	2
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	0	0	0	0	0	0
INDIANA	0	0	0	0	0	0	0
IOWA	0	0	0	0	0	0	0
KANSAS	0	0	0	1	0	0	1
KENTUCKY	0	0	0	0	0	6	6
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	0	0	0	0
MASSACHUSETTS	0	0	0	1	0	0	1
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	0	0	0	0	0	0	0
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0
NEW YORK	0	0	3	5	0	0	8

Table E-11 (continued). NADB INVENTORY OF STATIONS MONITORING SO_2 WITH COULOMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
NORTH CAROLINA	0	0	0	0	0	0	0
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	0	0	0	0	2	2
OKLAHOMA	0	0	0	0	0	0	0
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	0	0	0	0	0	0
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	0
TEXAS	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	0	0
WASHINGTON	0	0	0	0	0	1	1
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	0
WYOMING	0	0	0	0	0	0	0

Table E-12. NADB INVENTORY OF STATIONS MONITORING SO_2 WITH WEST-GAEKE BUBBLER METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
ALABAMA	2	1	0	0	0	0	3
ALASKA	0	1	0	0	0	0	1
ARIZONA	1	2	0	1	0	0	4
ARKANSAS	0	2	0	0	0	0	2
CALIFORNIA	3	13	0	0	0	0	16
COLORADO	0	2	0	0	0	0	2
CONNECTICUT	2	2	0	0	0	0	4
DELAWARE	2	1	0	0	0	0	3
DIST COLUMBIA	0	2	0	0	0	0	2
FLORIDA	4	1	0	0	3	16	24
GEORGIA	3	0	0	0	0	0	3
HAWAII	0	4	0	0	0	0	4
IDAHO	0	0	0	0	0	0	0
ILLINOIS	1	3	0	0	18	5	27
INDIANA	4	5	4	3	0	0	16
IOWA	1	1	0	0	0	0	2
KANSAS	2	1	2	5	1	0	11
KENTUCKY	1	3	9	33	0	0	46
LOUISIANA	3	1	0	0	0	0	4
MAINE	1	0	0	0	0	0	1
MARYLAND	1	1	0	0	0	7	9
MASSACHUSETTS	2	4	0	0	0	0	6
MICHIGAN	2	4	1	2	0	0	9
MINNESOTA	1	2	0	0	0	0	3
MISSISSIPPI	0	2	0	0	0	0	2
MISSOURI	3	1	0	0	0	0	4
MONTANA	0	1	0	0	0	0	1
NEBRASKA	1	2	0	0	0	0	3
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	1	0	0	0	0	0	1
NEW JERSEY	2	6	0	0	0	0	8
NEW MEXICO	0	3	0	0	0	0	3
NEW YORK	5	4	15	10	0	0	34

Table E-12 (continued). NADB INVENTORY OF STATIONS MONITORING SO_2 WITH WEST-GAEKE BUBBLER METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS VALID ANNUAL DATA	NUMBER OF FEDERAL STATIONS INVALID ANNUAL DATA	NUMBER OF STATE STATIONS VALID ANNUAL DATA	NUMBER OF STATE STATIONS INVALID ANNUAL DATA	NUMBER OF LOCAL STATIONS VALID ANNUAL DATA	NUMBER OF LOCAL STATIONS INVALID ANNUAL DATA	TOTAL
NORTH CAROLINA	2	3	0	68	0	0	73
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	8	2	0	0	20	5	35
OKLAHOMA	2	1	0	11	0	0	14
OREGON	0	1	0	0	0	0	1
PENNSYLVANIA	6	10	0	0	0	0	16
PUERTO RICO	1	3	0	0	0	0	4
RHODE ISLAND	0	3	1	12	0	0	16
SOUTH CAROLINA	1	0	0	0	0	0	1
SOUTH DAKOTA	0	1	0	0	0	0	1
TENNESSEE	1	4	0	0	0	0	5
TEXAS	2	12	0	0	0	14	28
UTAH	0	1	0	0	0	0	1
VERMONT	0	0	0	0	0	0	0
VIRGINIA	3	3	2	10	0	0	18
WASHINGTON	1	3	0	0	0	0	4
WEST VIRGINIA	1	0	0	13	0	0	14
WISCONSIN	1	2	0	0	0	0	3
WYOMING	0	2	0	0	0	0	2

Table E-13. NADB INVENTORY OF STATIONS MONITORING CO WITH NONDISPERSIVE INFRARED CONTINUOUS METHOD, 1971

	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		
STATE NAME	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	TOTAL
ALABAMA	0	0	0	1	0	0	1
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	1	6	1	17	4	29
COLORADO	0	1	0	0	0	0	1
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	0	0	0
DIST COLUMBIA	1	2	0	1	0	2	6
FLORIDA	0	1	0	0	0	1	2
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	1	0	0	3	5	9
INDIANA	0	0	0	2	0	0	2
IOWA	0	1	0	0	0	1	2
KANSAS	0	1	0	1	0	1	3
KENTUCKY	0	0	0	2	0	3	5
LOUISIANA	0	1	0	0	0	0	1
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	1	0	1	2
MASSACHUSETTS	0	1	0	2	0	0	3
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	1	1	0	0	0	8	10
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	1	0	0	1
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	8	2	0	0	10
NEW MEXICO	0	3	0	0	1	0	4
NEW YORK	0	1	5	6	0	0	12

Table E-13 (continued). NADB INVENTORY OF STATIONS MONITORING CO WITH NONDISPERSIVE INFRARED CONTINUOUS METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
NORTH CAROLINA	0	0	0	0	0	1	1
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	4	0	1	0	6	11
OKLAHOMA	0	0	0	0	0	4	4
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	2	0	0	0	0	2
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	2	0	0	2
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	2	0	0	0	2	4
TEXAS	0	3	0	0	0	3	6
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	2	0	2	0	1	5
WASHINGTON	0	0	3	5	0	2	10
WEST VIRGINIA	0	0	0	1	0	0	1
WISCONSIN	0	1	0	0	0	1	2
WYOMING	0	0	0	0	0	0	0

Table E-14. NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH ALKALINE KI METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS VALID ANNUAL DATA	NUMBER OF FEDERAL STATIONS INVALID ANNUAL DATA	NUMBER OF STATE STATIONS VALID ANNUAL DATA	NUMBER OF STATE STATIONS INVALID ANNUAL DATA	NUMBER OF LOCAL STATIONS VALID ANNUAL DATA	NUMBER OF LOCAL STATIONS INVALID ANNUAL DATA	TOTAL
ALABAMA	0	0	0	0	0	0	0
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	0	0	0	0	0	0
COLORADO	0	1	0	0	0	0	1
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	0	0	0
DIST COLUMBIA	1	0	0	0	0	0	1
FLORIDA	0	1	0	0	0	3	4
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	1	0	0	0	0	0	1
INDIANA	0	0	0	1	0	0	1
IOWA	0	1	0	0	0	1	2
KANSAS	0	1	0	0	0	1	2
KENTUCKY	0	0	0	2	0	0	2
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	0	0	0	0
MASSACHUSETTS	0	1	0	0	0	0	1
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	1	0	0	0	0	0	1
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	3	0	0	0	0	3
NEW MEXICO	0	1	0	0	0	0	1
NEW YORK	0	1	0	7	0	0	8

Table E-14 (continued). NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH ALKALINE KI METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
NORTH CAROLINA	0	0	0	0	0	1	1
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	3	0	0	0	5	8
OKLAHOMA	0	0	0	0	0	1	1
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	1	0	0	0	0	1
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	2	0	0	0	2	4
TEXAS	0	2	0	0	0	3	5
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	1	0	4	0	0	5
WASHINGTON	0	1	0	0	0	0	1
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	1	0	0	0	1	2
WYOMING	0	0	0	0	0	0	0

Table E-15. NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH NEUTRAL KI COLORIMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
ALABAMA	0	0	0	1	0	0	1
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	1	0	5	1	18	5	30
COLORADO	0	1	0	0	0	0	1
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	0	0	0
DIST COLUMBIA	0	2	0	0	0	0	2
FLORIDA	0	0	0	0	0	0	0
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	0	0	0	0	0	0
INDIANA	0	0	0	0	0	0	0
IOWA	0	0	0	0	0	0	0
KANSAS	0	0	0	0	0	0	0
KENTUCKY	0	0	0	1	0	0	1
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	0		2	2
MASSACHUSETTS	0	0	0	0		0	0
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	0	1	0	0	0	8	9
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0
NEW YORK	0	0	0	0	0	0	0

Table E-15 (continued). NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH NEUTRAL KI COLORIMETRIC METHOD, 1971

	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		
STATE NAME	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	TOTAL
NORTH CAROLINA	0	0	0	0	0	0	0
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	1	0	0	0	3	4
OKLAHOMA	0	0	0	0	0	0	0
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	1	0	0	0	0	1
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	0
TEXAS	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	1	1
WASHINGTON	0	0	0	0	0	0	0
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	0
WYOMING	0	0	0	0	0	0	0
			0				

Table E-16. NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH NEUTRAL KI COULOMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS VALID ANNUAL DATA	NUMBER OF FEDERAL STATIONS INVALID ANNUAL DATA	NUMBER OF STATE STATIONS VALID ANNUAL DATA	NUMBER OF STATE STATIONS INVALID ANNUAL DATA	NUMBER OF LOCAL STATIONS VALID ANNUAL DATA	NUMBER OF LOCAL STATIONS INVALID ANNUAL DATA	TOTAL
ALABAMA	0	0	0	0	0	0	0
ALASKA	0	0	0	0	0	0	0
ARIZONA	0	0	0	0	0	0	0
ARKANSAS	0	0	0	0	0	0	0
CALIFORNIA	0	0	1	1	7	1	10
COLORADO	0	0	0	0	0	0	0
CONNECTICUT	0	0	0	0	0	0	0
DELAWARE	0	0	0	0	0	0	0
DIST COLUMBIA	0	0	0	0	0	0	0
FLORIDA	0	0	0	0	0	0	0
GEORGIA	0	0	0	0	0	0	0
HAWAII	0	0	0	0	0	0	0
IDAHO	0	0	0	0	0	0	0
ILLINOIS	0	0	0	0	0	0	0
INDIANA	0	0	0	0	0	0	0
IOWA	0	0	0	0	0	0	0
KANSAS	0	0	0	0	0	0	0
KENTUCKY	0	0	0	0	0	0	0
LOUISIANA	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0
MARYLAND	0	0	0	0	0	0	0
MASSACHUSETTS	0	0	0	0	0	0	0
MICHIGAN	0	0	0	0	0	0	0
MINNESOTA	0	0	0	0	0	0	0
MISSISSIPPI	0	0	0	0	0	0	0
MISSOURI	0	0	0	0	0	0	0
MONTANA	0	0	0	0	0	0	0
NEBRASKA	0	0	0	0	0	0	0
NEVADA	0	0	0	0	0	0	0
NEW HAMPSHIRE	0	0	0	0	0	0	0
NEW JERSEY	0	0	0	0	0	0	0
NEW MEXICO	0	0	0	0	0	0	0
NEW YORK	0	0	0	0	0	0	0

Table E-16 (continued). NADB INVENTORY OF STATIONS MONITORING TOTAL OXIDANTS WITH NEUTRAL KI COULOMETRIC METHOD, 1971

STATE NAME	NUMBER OF FEDERAL STATIONS		NUMBER OF STATE STATIONS		NUMBER OF LOCAL STATIONS		TOTAL
	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	VALID ANNUAL DATA	INVALID ANNUAL DATA	
NORTH CAROLINA	0	0	0	0	0	0	0
NORTH DAKOTA	0	0	0	0	0	0	0
OHIO	0	0	0	0	0	0	0
OKLAHOMA	0	0	0	0	0	0	0
OREGON	0	0	0	0	0	0	0
PENNSYLVANIA	0	0	0	0	0	0	0
PUERTO RICO	0	0	0	0	0	0	0
RHODE ISLAND	0	0	0	0	0	0	0
SOUTH CAROLINA	0	0	0	0	0	0	0
SOUTH DAKOTA	0	0	0	0	0	0	0
TENNESSEE	0	0	0	0	0	0	0
TEXAS	0	0	0	0	0	0	0
UTAH	0	0	0	0	0	0	0
VERMONT	0	0	0	0	0	0	0
VIRGINIA	0	0	0	0	0	0	0
WASHINGTON	0	0	0	0	0	1	1
WEST VIRGINIA	0	0	0	0	0	0	0
WISCONSIN	0	0	0	0	0	0	0
WYOMING	0	0	0	0	0	0	0

APPENDIX F.

AIR QUALITY TRENDS AT NASN STATIONS

Table F-1 presents observed annual mean levels and trends at individual urban and nonurban NASN stations for total suspended particulates from 1960 through 1971 and for sulfur dioxide at urban NASN stations from 1964 through 1971. Annual means are denoted as zero in the table whenever there were not sufficient valid data to compute annual means. The observed trends at these NASN stations do not necessarily represent any spatial or temporal changes throughout a city or its AQCR. As a group, station trends provide an indication of overall national changes in TSP and SO_2 at center-city locations and nonurban sites.

The trends are defined over several time subintervals and are based on statistically significant changes in geometric mean concentrations. The long-term trends are based on changes in mean concentrations between 4-year subintervals: 1960 through 1963, 1964 through 1967, and 1968 through 1971. These are denoted in Table F-1, as A, B, and C, respectively.

For TSP, long-term behavior is indicated by the trends reported from 1960 through 1971 and 1964 through 1971. Trends from 1960 through 1967 are included for better definition of the overall pattern. For SO_2, long-term behavior is based on trends from 1964 through 1971. Recent, short-term behavior is indicated by change from 1968 through 1971.

Each trend is categorized as DOWN, UP, or **, the latter denoting no detectable change. Short-term trends, 1968 through 1971, are sometimes categorized as LOW, indicating that the geometric mean concentration for the interval was ≤ 10 $\mu g/m^3$ and that a more specific determination was unrealistic.

Without accompanying data on meteorology and emission patterns, these trends should not be extrapolated to predict future concentration levels or direction of change.

Table F-1. AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

		URBAN SULFUR DIOXIDE																	
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
LOCATION :		B				C				B				C				B : C	C
		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
2 COLUMBUS-PHENIX CITY (ALA-GA)																			
ALABAMA																			
MONTGOMERY	001A01	0	0	0	0	0	12	7	6	0	0	0	0	0	5	5	5		LOW
GEORGIA																			
COLUMBUS	[illegible]1A01	0	0	0	0	0	0	6	6	0	0	0	0	0	0	6	5		LOW
15 PHOENIX-TUCSON (ARIZ)																			
ARIZONA																			
PHOENIX	002A01	0	0	0	0	15	10	6	10	0	0	0	0	8	9	0	8		LOW
TUCSON	001A01	0	0	0	0	0	10	7	0	0	0	0	0	0	9	5	0		LOW
18 METROPOLITAN MEMPHIS (ARK-MISS-TENN)																			
TENNESSEE																			
MEMPHIS	[illegible]01A01	0	0	0	0	1	12	17	7	0	0	0	0	8	9	8	6		LOW
24 METROPOLITAN LOS ANGELES (CALIF)																			
CALIFORNIA																			
ANAHEIM	001A01	0	0	0	0	15	13	[illegible]	14	0	0	0	0	12	11	6	9		LOW
LONG BEACH	001A01	0	0	0	0	[illegible]	[illegible]	30	0	0	0	0	0	41	30	23	0		**
SAN BERNARDINO	001A01	0	0	0	0	16	[illegible]	7	0	0	0	0	0	8	9	5	0		LOW
SANTA ANA	001A01	0	0	0	0	0	12	7	0	0	0	0	0	0	11	5	0		LOW
29 SAN DIEGO (CALIF)																			
CALIFORNIA																			
SAN DIEGO	[illegible]1A01	0	0	0	0	12	12	10	[illegible]	0	0	0	0	5	10	7	0		LOW
30 SAN FRANCISCO BAY AREA (CALIF)																			
CALIFORNIA																			
SAN FRANCISCO	001A01	0	0	0	0	12	15	[illegible]	8	0	0	0	0	0	10	6	7		LOW
SAN JOSE	002A01	0	0	0	0	7	6	[illegible]	6	0	0	0	0	6	8	0	5		LOW
36 METROPOLITAN DENVER (COLO)																			
COLORADO																			
DENVER	[illegible]1A01	22	14	0	0	0	17	13	0	0	11	0	0	0	15	8	0	**	DOWN
DENVER	002A01	0	0	0	0	17	17	11	0	0	0	0	0	14	14	8	0		DOWN
42 HARTFORD-NEW HAVEN-SPRINGFIELD (CONN-MASS)																			
CONNECTICUT																			
HARTFORD	[illegible]1A01	[illegible]	77	62	[illegible]	[illegible]	[illegible]	87	0	[illegible]	73	65	61	33	34	20	0	DOWN	**
NEW HAVEN	001A01	40	[illegible]	101	130	[illegible]	[illegible]	40	40	[illegible]	[illegible]	70	73	81	33	18	23	DOWN	DOWN
WATERBURY	001A01	0	0	0	0	0	25	17	44	0	0	0	0	0	14	12	32		UP
MASSACHUSETTS																			
SPRINGFIELD	002A01	0	0	0	0	74	67	47	0	0	0	0	0	58	51	51	0		**
43 NEW JERSEY-NEW YORK-CONNECTICUT																			
CONNECTICUT																			
BRIDGEPORT	[illegible]1A01	0	0	0	0	76	0	40	0	0	0	0	0	53	0	12	0		DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

LOCATION :		URBAN SULFUR DIOXIDE ANNUAL ARITHMETIC MEANS B 64	65	66	67	C 68	69	70	71	ANNUAL GEOMETRIC MEANS B 64	65	66	67	C 68	69	70	71	TRENDS B : C 64-71	C 68-71
43 NEW JERSEY-NEW YORK-CONNECTICUT																			
NEW JERSEY																			
JERSEY CITY	001A01	0	0	0	0	12	30	75	0	0	0	0	0	7	13	39	0		UP
NEWARK	001A01	204	145	174	129	112	61	37	0	158	125	135	86	79	44	16	0	DOWN	DOWN
PATERSON	001A01	0	0	0	0	85	57	28	0	0	0	0	0	65	39	12	0		DOWN
45 METROPOLITAN PHILADELPHIA (DEL-N.J.-PA)																			
DELAWARE																			
NEWARK	001A01	0	0	0	0	26	0	16	0	0	0	0	0	18	0	8	0		DOWN
WILMINGTON	003A01	0	0	0	0	0	0	17	30	0	0	0	0	0	0	9	20		UP
NEW JERSEY																			
BURLINGTON COUNT	002A01	0	0	0	58	52	33	32	10	0	0	0	43	36	25	15	7	DOWN	DOWN
CAMDEN	001A01	0	0	0	139	126	131	69	0	0	0	0	110	92	108	28	0	DOWN	DOWN
GLASSBORO	001A01	0	0	0	23	25	7	7	0	0	0	0	19	16	7	5	0	DOWN	LOW
PENNSYLVANIA																			
PHILADELPHIA	001A01	0	0	0	0	90	70	84	0	0	0	0	0	66	55	62	0		**
PHILADELPHIA	002A01	0	0	0	0	0	0	73	54	0	0	0	0	0	0	44	37		**
WARMINSTER	001A01	0	0	0	44	25	28	28	0	0	0	0	33	18	23	14	0	DOWN	**
50 SOUTHEAST FLORIDA																			
FLORIDA																			
MIAMI	002A01	0	0	0	0	7	10	7	5	0	0	0	0	5	9	5	4		LOW
52 WEST CENTRAL FLORIDA																			
FLORIDA																			
ST PETERSBURG	002A01	0	0	0	0	0	26	17	16	0	0	0	0	0	18	10	9		DOWN
TAMPA	002A01	0	0	0	0	20	23	17	20	0	0	0	0	14	17	9	11		**
55 CHATTANOOGA (GA-TENN)																			
TENNESSEE																			
CHATTANOOGA	001A01	0	0	34	29	0	11	18	0	0	0	17	16	0	9	10	0	DOWN	LOW
54 METROPOLITAN ATLANTA (GA)																			
GEORGIA																			
ATLANTA	001A01	0	0	0	0	31	26	20	22	0	0	0	0	21	17	11	16		**
58 SAVANNAH-BEAUFORT (GA-S.C.)																			
GEORGIA																			
SAVANNAH	001A01	0	0	0	0	0	19	10	7	0	0	0	0	0	14	8	6		LOW
67 METROPOLITAN CHICAGO (ILL-IND)																			
ILLINOIS																			
CHICAGO	002A01	0	0	0	0	174	164	120	73	0	0	0	0	125	114	48	37		DOWN
INDIANA																			
EAST CHICAGO	001A01	0	0	105	117	75	58	57	0	0	0	73	83	56	72	33	0	DOWN	DOWN
HAMMOND	001A01	0	0	0	0	0	85	58	32	0	0	0	0	0	53	29	20		DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

		URBAN SULFUR DIOXIDE																	
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
		B				C				B				C				B : C	C
LOCATION :		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
70 METROPOLITAN ST. LOUIS (ILL-MO)																			
MISSOURI																			
ST LOUIS	001A01	87	0	0	84	91	73	0	10	70	0	0	56	78	46	0	7	DOWN	DOWN
ST LOUIS	002A01	0	0	0	0	86	69	40	28	0	0	0	0	46	50	23	19		DOWN
77 EVANSVILLE-OWENSBORO-HENDERSON (IND-KY)																			
INDIANA																			
EVANSVILLE	001A01	0	0	66	47	24	32	25	19	0	0	49	35	18	24	18	14	DOWN	**
78 LOUISVILLE (IND-KY)																			
INDIANA																			
NEW ALBANY	002A01	0	0	0	0	45	38	0	5	0	0	0	0	29	25	0	4		DOWN
79 METROPOLITAN CINCINNATI (IND-KY-OHIO)																			
KENTUCKY																			
COVINGTON	001A01	0	0	35	28	36	31	26	19	0	0	29	21	27	23	18	13	DOWN	DOWN
OHIO																			
CINCINNATI	001A01	0	0	0	0	29	26	0	17	0	0	0	0	21	20	0	15		**
CINCINNATI	003A01	0	0	0	0	35	30	25	24	0	0	0	0	25	25	19	14		DOWN
80 METROPOLITAN INDIANAPOLIS (IND)																			
INDIANA																			
INDIANAPOLIS	001A01	66	47	0	51	39	41	33	11	46	25	0	32	30	26	18	8	DOWN	DOWN
85 METROPOLITAN OMAHA-COUNCIL BLUFFS (IOWA-NEB)																			
NEBRASKA																			
OMAHA	001A01	0	0	0	26	15	15	0	13	0	0	0	14	10	11	0	9	**	LOW
92 SOUTH CENTRAL IOWA																			
IOWA																			
DES MOINES	001A01	12	10	0	15	11	17	12	6	8	5	0	10	9	11	7	5	**	LOW
99 SOUTH CENTRAL KANSAS																			
KANSAS																			
WICHITA	001A01	0	0	0	0	7	8	6	6	0	0	0	0	6	8	5	5		LOW
102 BLUEGRASS (KY)																			
KENTUCKY																			
LEXINGTON	001A01	0	0	0	0	17	0	12	0	0	0	0	0	11	0	7	0		LOW
106 SOUTHERN LOUISIANA-SOUTHEAST TEXAS (LOUISIANA-TEXAS)										S)									
LOUISIANA																			
NEW ORLEANS	002A01	0	0	0	0	11	9	7	6	0	0	0	0	9	8	6	5		LOW
115 METROPOLITAN BALTIMORE (MD)																			
MARYLAND																			
BALTIMORE	001A01	102	0	0	0	0	58	54	29	65	0	0	0	0	42	23	15	DOWN	DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

URBAN SULFUR DIOXIDE

LOCATION :		ANNUAL ARITHMETIC MEANS B 64	65	66	67	C 68	69	70	71	ANNUAL GEOMETRIC MEANS B 64	65	66	67	C 68	69	70	71	TRENDS B : C 64-71	C 68-71
11- METROPOLITAN BOSTON (MASS)																			
MASSACHUSETTS																			
WORCESTER	001A01	0	0	0	0	67	76	31	45	0	0	0	0	48	45	15	24		DOWN
120 METROPOLITAN PROVIDENCE (MASS-R.I.)																			
RHODE ISLAND																			
PROVIDENCE	001A01	112	110	0	39	56	121	67	0	57	70	0	16	23	69	32	0	**	**
122 CENTRAL MICHIGAN																			
MICHIGAN																			
FLINT	001A01	0	0	0	0	23	25	16	0	0	0	0	0	19	20	12	0		DOWN
GRAND RAPIDS	001A01	0	0	0	0	22	19	13	0	0	0	0	0	19	16	10	0		DOWN
SAGINAW	001A01	0	0	0	0	0	23	17	12	0	0	0	0	0	15	10	8		DOWN
123 METROPOLITAN DETROIT-PORT HURON (MICH)																			
MICHIGAN																			
DETROIT	001A01	0	10	16	42	66	55	38	12	0	7	10	29	54	46	23	9	UP	DOWN
124 METROPOLITAN TOLEDO (MICH-OHIO)																			
OHIO																			
TOLEDO	001A01	0	0	0	0	36	33	13	15	0	0	0	0	28	27	9	9		DOWN
125 SOUTH CENTRAL MICHIGAN																			
MICHIGAN																			
LANSING	001A01	0	0	0	0	0	23	22	0	0	0	0	0	0	17	13	0		**
131 MINNEAPOLIS-ST. PAUL (MINN)																			
MINNESOTA																			
MINNEAPOLIS	001A01	27	34	44	47	28	26	38	0	17	18	17	24	16	16	15	0	**	**
136 NORTHERN PIEDMONT (N.C.)																			
NORTH CAROLINA																			
GREENSBORO	001A01	0	0	0	0	21	20	13	6	0	0	0	0	14	16	8	5		LOW
151 NORTHEAST PENNSYLVANIA-UPPER DEL. VAL. (PENN-N.J.)																			
PENNSYLVANIA																			
ALLENTOWN	001A01	0	0	0	0	49	57	57	0	0	0	0	0	29	42	25	0		**
READING	001A01	0	0	0	0	0	54	30	0	0	0	0	0	0	30	14	0		DOWN
152 ALBUQUERQUE-MID RIO GRANDE (N. MEX)																			
NEW MEXICO																			
ALBUQUERQUE	001A01	0	0	0	0	6	11	6	0	0	0	0	0	5	8	4	0		LOW
160 GENESEE-FINGER LAKES (N.Y.)																			
NEW YORK																			
ROCHESTER	001A01	0	0	0	0	44	64	32	22	0	0	0	0	33	35	16	13		DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

LOCATION :		URBAN SULFUR DIOXIDE																	
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
		B				C				B				C				B : C	C
		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
161 HUDSON VALLEY (N.Y.)																			
NEW YORK																			
ALBANY	001A01	0	0	0	0	0	45	20	47	0	0	0	0	0	36	11	28		DOWN
162 NIAGARA FRONTIER (N.Y.)																			
NEW YORK																			
BUFFALO	001A01	0	0	0	0	27	11	0	7	0	0	0	0	18	10	0	6		DOWN
173 DAYTON (OHIO)																			
OHIO																			
DAYTON	001A01	31	42	0	22	7	10	25	22	19	31	0	11	5	8	15	13	DOWN	LOW
174 GREATER METROPOLITAN CLEVELAND (OHIO)																			
OHIO																			
AKRON	001A01	0	0	0	0	76	51	51	31	0	0	0	0	59	32	35	15		DOWN
CANTON	001A01	0	0	0	0	44	34	30	17	0	0	0	0	53	29	19	12		DOWN
CLEVELAND	001A01	87	89	78	58	86	67	64	0	68	77	56	45	71	52	47	0	**	**
176 METROPOLITAN COLUMBUS (OHIO)																			
OHIO																			
COLUMBUS	001A01	0	0	0	0	26	23	22	28	0	0	0	0	22	25	15	19		**
178 NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN)																			
OHIO																			
YOUNGSTOWN	001A01	63	57	66	56	43	52	30	17	50	41	52	43	35	38	21	9	DOWN	DOWN
184 CENTRAL OKLAHOMA																			
OKLAHOMA																			
OKLAHOMA CITY	001A01	0	0	0	11	9	0	7	0	0	0	0	9	7	0	5	0	DOWN	LOW
186 NORTHEASTERN OKLAHOMA																			
OKLAHOMA																			
TULSA	001A01	0	0	0	9	7	9	0	5	0	0	0	7	6	7	0	4	**	LOW
195 CENTRAL PENNSYLVANIA																			
PENNSYLVANIA																			
JOHNSTOWN	001A01	0	0	0	0	0	39	25	0	0	0	0	0	0	32	13	0		DOWN
196 SOUTH CENTRAL PENNSYLVANIA																			
PENNSYLVANIA																			
YORK	002A01	0	0	0	0	64	44	31	12	0	0	0	0	49	32	17	9		DOWN
197 SOUTHWEST PENNSYLVANIA																			
PENNSYLVANIA																			
PITTSBURGH	001A01	93	89	94	71	76	76	57	50	79	78	83	63	60	62	40	36	DOWN	DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

		URBAN SULFUR DIOXIDE																	
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
		B				C				B				C				B : C	C
LOCATION :		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
208 MIDDLE TENNESSEE																			
TENNESSEE																			
NASHVILLE	001A01	22	23	29	23	29	20	15	0	14	15	17	14	19	13	11	0	**	**
[illegible] METROPOLITAN DALLAS-FORT WORTH (TEX)																			
TEXAS																			
[illegible]	002A01	0	0	0	0	7	9	7	0	0	0	0	0	7	8	6	0		LOW
FORT WORTH	001A01	0	0	0	0	7	11	8	5	0	0	0	0	6	9	6	4		LOW
[illegible] METROPOLITAN HOUSTON-GALVESTON (TEX)																			
TEXAS																			
HOUSTON	001A01	0	0	0	0	0	10	10	0	0	0	0	0	0	8	7	0		LOW
PASADENA	002A01	0	0	0	0	0	12	0	5	0	0	0	0	0	9	0	4		LOW
217 METROPOLITAN SAN ANTONIO (TEX)																			
TEXAS																			
SAN ANTONIO	001A01	0	0	0	0	7	9	7	0	0	0	0	0	6	8	6	0		LOW
220 WASATCH FRONT (UTAH)																			
UTAH																			
SALT LAKE CITY	001A01	19	12	20	17	17	26	9	0	12	9	11	11	12	19	7	0	**	DOWN
223 HAMPTON ROADS (VA)																			
VIRGINIA																			
NORFOLK	001A01	0	0	0	0	36	36	26	30	0	0	0	0	29	26	17	15		DOWN
225 STATE CAPITAL (VA)																			
VIRGINIA																			
RICHMOND	002A01	0	0	0	0	40	29	24	0	0	0	0	0	30	23	15	0		DOWN
229 PUGET SOUND (WASH)																			
WASHINGTON																			
SEATTLE	001A01	39	35	0	24	26	41	22	24	28	28	0	14	21	30	13	17	**	DOWN
234 KANAWHA VALLEY (W. VA.)																			
WEST VIRGINIA																			
CHARLESTON	001A01	24	17	0	30	29	35	27	7	16	13	0	21	22	24	15	6	**	DOWN
239 SOUTHEASTERN WISCONSIN																			
WISCONSIN																			
MILWAUKEE	001A01	20	15	31	41	38	16	16	0	18	12	24	34	28	14	12	0	**	DOWN
241 CASPER (WYO)																			
WYOMING																			
CASPER	001A01	0	0	0	25	9	14	9	0	0	0	0	16	8	10	6	0	DOWN	LOW

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

		URBAN SULFUR DIOXIDE																	
		ANNUAL ARITHMETIC MEANS								ANNUAL GEOMETRIC MEANS								TRENDS	
LOCATION :		B				C				B				C				B : C	C
		64	65	66	67	68	69	70	71	64	65	66	67	68	69	70	71	64-71	68-71
244 PUERTO RICO																			
PUERTO RICO																			
BAYAMON	002A01	0	0	0	0	7	9	10	6	0	0	0	0	6	8	7	5		LOW
GUAYANILLA	002A01	0	0	0	0	0	14	15	0	0	0	0	0	0	12	7	0		LOW

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
2 COLUMBUS-PHENIX CITY (ALA-GA)																	
ALABAMA																	
MONTGOMERY	001A01	0	67	0	76	0	79	0	70	76	75	80	61	**	**	**	**
GEORGIA																	
COLUMBUS	001A01	90	0	78	0	0	0	0	0	0	56	56	59	DOWN			**
3 EAST ALABAMA																	
ALABAMA																	
GADSDEN	001A01	0	0	0	0	85	0	67	0	90	60	71	77			**	**
7 TENN. RIVER VALLEY-CUMBERLAND MTS (ALA-TENN)																	
ALABAMA																	
HUNTSVILLE	001A01	0	0	0	72	0	83	0	62	60	58	61	58	**	**	DOWN	**
8 COOK INLET (ALSK)																	
ALASKA																	
ANCHORAGE	003A01	0	0	0	0	0	0	0	69	60	79	72	59			**	**
15 PHOENIX-TUCSON (ARIZ)																	
ARIZONA																	
MARICOPA COUNTY	001A01	54	57	49	56	81	48	47	57	44	37	58	89	**	**	**	UP
PHOENIX	002A01	0	195	221	186	163	145	128	154	142	112	0	135	DOWN	DOWN	DOWN	**
TUCSON	001A01	135	121	117	106	128	118	80	89	70	78	96	88	DOWN	DOWN	DOWN	UP
16 CENTRAL ARKANSAS																	
ARKANSAS																	
LITTLE ROCK	001A01	66	70	71	0	69	0	107	79	69	75	64	0	**	UP	DOWN	**
18 METROPOLITAN MEMPHIS (ARK-MISS-TENN)																	
ARKANSAS																	
WEST MEMPHIS	001A01	0	0	0	0	0	0	88	0	78	73	82	45			DOWN	DOWN
TENNESSEE																	
MEMPHIS	001A01	94	93	101	0	109	97	102	88	74	69	78	89	DOWN	**	DOWN	**
22 SHREVEPORT-TEXARKANA-TYLER (ARK-LA-OKLA-TEX)																	
LOUISIANA																	
SHREVEPORT	001A01	0	0	0	0	0	96	0	0	0	64	76	80			DOWN	**
24 METROPOLITAN LOS ANGELES (CALIF)																	
CALIFORNIA																	
ANAHEIM	001A01	0	0	0	0	0	0	0	0	0	93	114	116				UP
BURBANK	002A01	0	0	0	0	135	0	114	0	106	88	123	131			**	UP
GLENDALE	001A01	0	110	0	102	0	110	0	75	90	74	87	85	DOWN	**	**	**
LONG BEACH	001A01	0	130	0	111	0	123	0	118	115	104	95	87	DOWN	**	DOWN	**
LOS ANGELES	001A01	143	162	139	114	111	157	113	91	129	93	125	133	DOWN	DOWN	**	**
ONTARIO	001A01	0	0	0	0	0	0	0	0	116	109	116	111				**
PASADENA	001A01	122	0	163	0	117	0	119	0	106	0	0	100	DOWN	DOWN	DOWN	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
LOCATION :		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
24 METROPOLITAN LOS ANGELES (CALIF) CONTINUED																	
RIVERSIDE	001A01	0	0	0	0	0	0	0	0	116	124	119	0				**
SAN BERNARDINO	001A01	0	147	0	143	0	0	0	0	92	95	118	104	DOWN			**
SANTA ANA	001A01	0	0	0	0	99	0	0	0	0	123	127	140			UP	**
TORRANCE	001A01	0	0	0	0	0	0	0	0	0	68	86	0				**
28 SACRAMENTO VALLEY (CALIF)																	
CALIFORNIA																	
SACRAMENTO	001A01	75	0	62	0	68	0	0	0	63	54	57	54	DOWN	**	**	**
29 SAN DIEGO (CALIF)																	
CALIFORNIA																	
SAN DIEGO	001A0	76	88	91	76	90	75	63	64	62	73	73	0	DOWN	DOWN	**	**
30 SAN FRANCISCO BAY AREA (CALIF)																	
CALIFORNIA																	
OAKLAND	001A01	91	0	87	79	79	87	85	87	83	71	64	49	DOWN	**	DOWN	DOWN
SAN FRANCISCO	001A01	64	58	57	64	56	63	60	66	84	54	50	52	**	**	**	DOWN
36 METROPOLITAN DENVER (COLO)																	
COLORADO																	
DENVER	001A01	149	122	114	145	116	135	117	93	107	113	122	118	DOWN	DOWN	**	**
42 HARTFORD-NEW HAVEN-SPRINGFIELD (CONN-MASS)																	
CONNECTICUT																	
HARTFORD	001A01	165	72	112	98	106	84	82	76	60	62	62	64	DOWN	**	DOWN	**
NEW HAVEN	001A01	82	85	80	90	103	99	101	83	68	86	93	89	**	UP	DOWN	UP
WATERBURY	001A01	0	0	0	65	0	105	0	0	0	79	86	88	UP	UP	**	**
MASSACHUSETTS																	
SPRINGFIELD	002A01	0	0	0	0	0	0	0	0	0	56	64	0				**
43 NEW JERSEY-NEW YORK-CONNECTICUT																	
CONNECTICUT																	
BRIDGEPORT	001A01	97	0	89	0	0	0	0	0	0	66	64	58	DOWN			**
NEW JERSEY																	
ELIZABETH	002A01	0	0	0	0	0	0	0	0	0	0	83	87				**
JERSEY CITY	001A01	0	139	0	119	0	133	129	107	101	84	94	100	DOWN	**	DOWN	**
NEWARK	001A01	103	99	101	101	114	113	88	86	83	70	81	0	DOWN	**	DOWN	**
PATERSON	001A01	0	0	0	85	0	99	0	83	78	76	86	0	**	**	**	**
PERTH AMBOY	001A01	0	0	0	0	0	129	0	112	85	73	76	88			DOWN	**
NEW YORK																	
NEW YORK CITY	001A01	151	167	162	190	183	164	124	163	0	106	123	0	DOWN	**	DOWN	**
45 METROPOLITAN PHILADELPHIA (DEL-N.J.-PA)																	
DELAWARE																	
NEWARK	001A01	0	0	0	0	0	83	102	64	64	0	73	69			DOWN	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
45 METROPOLITAN PHILADELPHIA (DEL-N.J.-PA)																	
NEW JERSEY																	
BURLINGTON COUNT	002A01	0	0	0	0	0	65	91	85	76	64	75	71			DOWN	**
CAMDEN	001A01	139	0	145	0	160	0	143	0	123	122	107	0	DOWN	**	DOWN	**
GLASSBORO	001A01	0	0	0	0	60	63	59	48	64	63	65	0			**	**
TRENTON	001A01	0	0	0	0	0	0	0	0	62	72	80	0				**
PENNSYLVANIA																	
PHILADELPHIA	001A01	144	160	151	148	165	170	140	150	112	127	135	100	DOWN	**	DOWN	DOWN
WARMINSTER	001A01	0	0	0	0	0	61	79	90	63	44	51	0			DOWN	DOWN
47 NATIONAL CAPITAL (D.C.-MD-VA)																	
DIST COLUMBIA																	
WASHINGTON	001A01	126	107	88	109	79	54	72	63	26	73	0	73	DOWN	DOWN	**	**
WASHINGTON	003A01	0	0	0	0	0	0	0	0	0	0	91	89				**
49 JACKSONVILLE-BRUNSWICK (FLA-GA)																	
FLORIDA																	
JACKSONVILLE	002A01	0	0	0	0	0	0	0	0	79	76	67	62				**
50 SOUTHEAST FLORIDA																	
FLORIDA																	
MIAMI	002A01	0	0	0	0	0	0	0	0	0	65	70	68				**
52 WEST CENTRAL FLORIDA																	
FLORIDA																	
ST PETERSBURG	002A01	0	0	0	0	0	0	0	0	0	36	43	43				**
TAMPA	003A01	0	0	0	0	0	0	0	0	87	71	87	0				**
55 CHATTANOOGA (GA-TENN)																	
TENNESSEE																	
CHATTANOOGA	001A01	171	190	146	183	179	143	131	129	135	105	113	0	DOWN	DOWN	DOWN	**
56 METROPOLITAN ATLANTA (GA)																	
GEORGIA																	
ATLANTA	001A01	102	0	84	96	91	110	89	103	81	78	82	79	DOWN	**	DOWN	**
58 SAVANNAH-BEAUFORT (GA-S.C.)																	
GEORGIA																	
SAVANNAH	001A01	0	77	0	72	0	0	0	0	0	93	81	65	**			DOWN
60 HAWAII																	
HAWAII																	
HONOLULU	001A01	46	40	39	39	42	40	34	36	42	40	35	41	**	DOWN	**	**
62 EASTERN WASHINGTON-NORTHERN IDAHO (IDAHO-WASHINGTON)																	
WASHINGTON																	
SPOKANE	001A01	111	101	0	79	0	0	0	0	0	74	79	82	DOWN			**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

LOCATION :		NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER															
		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
64 METROPOLITAN BOISE (IDAHO)																	
IDAHO																	
BOISE	001A01	120	89	86	70	79	79	89	66	59	55	65	76	DOWN	DOWN	**	UP
65 BURLINGTON-KEOKUK (ILL-IOWA)																	
ILLINOIS																	
PEORIA	001A01	0	0	127	0	126	0	0	0	0	130	131	88	**	**	**	DOWN
67 METROPOLITAN CHICAGO (ILL-IND)																	
ILLINOIS																	
CHICAGO	001A01	0	179	115	137	167	133	114	92	112	135	112	115	DOWN	DOWN	**	**
NORTH CHICAGO	002A01	0	0	0	0	0	0	0	0	0	84	83	69				**
INDIANA																	
EAST CHICAGO	001A01	152	0	0	171	209	192	174	162	144	170	177	150	**	**	DOWN	**
GARY	001A01	190	0	0	0	0	0	0	0	0	119	119	0	DOWN			**
HAMMOND	001A01	0	121	0	155	0	117	0	110	95	105	116	104	DOWN	**	**	**
69 METROPOLITAN QUAD CITIES (ILL-IOWA)																	
ILLINOIS																	
ROCK ISLAND	001A01	0	0	0	0	135	0	0	0	0	0	74	91			DOWN	**
70 METROPOLITAN ST. LOUIS (ILL-MO)																	
MISSOURI																	
ST LOUIS	001A01	156	132	131	112	138	143	135	113	0	186	0	88	**	**	**	DOWN
75 WEST CENTRAL ILLINOIS																	
ILLINOIS																	
SPRINGFIELD	001A01	0	0	110	0	0	91	0	68	66	76	81	83	DOWN	DOWN	**	UP
77 EVANSVILLE-OWENSBORO-HENDERSON (IND-KY)																	
INDIANA																	
EVANSVILLE	001A01	123	0	81	0	91	0	0	0	0	89	82	70	DOWN	**	**	**
78 LOUISVILLE (IND-KY)																	
INDIANA																	
NEW ALBANY	002A01	0	0	0	0	0	0	109	0	0	105	75	0			**	**
79 METROPOLITAN CINCINNATI (IND-KY-OHIO)																	
KENTUCKY																	
COVINGTON	001A01	0	0	0	0	111	0	105	74	83	93	90	90			**	**
OHIO																	
CINCINNATI	001A01	136	110	117	116	149	133	138	111	99	104	101	97	DOWN	**	DOWN	**
CINCINNATI	002A01	0	0	0	0	0	0	0	74	78	64	69	0			**	**
80 METROPOLITAN INDIANAPOLIS (IND)																	
INDIANA																	
INDIANAPOLIS	001A01	171	149	134	143	153	152	146	127	122	108	106	86	DOWN	**	DOWN	DOWN

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

ANNUAL GEOMETRIC MEANS

LOCATION :		A				B				C				TRENDS A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
81 NORTHEAST INDIANA																	
INDIANA																	
FORT WAYNE	001A01	109	0	106	0	109	0	0	0	0	81	90	0	DOWN	**	DOWN	**
82 SOUTH BEND-ELKHART-BENTON HARBOR (IND.-MICH)																	
INDIANA																	
SOUTH BEND	002A01	0	0	0	0	0	0	0	0	0	72	90	0				**
84 WABASH VALLEY (IND)																	
INDIANA																	
TERRE HAUTE	001A01	0	110	0	126	0	0	0	102	0	92	93	0	DOWN	**	**	**
85 METROPOLITAN OMAHA-COUNCIL BLUFFS (IOWA-NEB)																	
IOWA																	
DAVENPORT	001A01	0	95	0	103	0	0	109	0	0	152	148	0	UP	**	UP	**
NEBRASKA																	
OMAHA	001A01	97	86	100	96	121	105	120	116	136	103	121	112	UP	UP	**	**
87 METROPOLITAN SIOUX FALLS (IOWA-S.D.)																	
SOUTH DAKOTA																	
SIOUX FALLS	001A01	0	57	80	58	79	55	58	0	55	0	0	78	**	**	**	UP
88 NORTHEAST IOWA																	
IOWA																	
CEDAR RAPIDS	001A01	0	0	0	125	150	123	0	123	91	0	109	0	DOWN	**	DOWN	**
92 SOUTH CENTRAL IOWA																	
IOWA																	
DES MOINES	001A01	164	119	116	110	117	127	114	108	90	91	94	86	DOWN	**	DOWN	**
94 METROPOLITAN KANSAS CITY (KAN-MO)																	
KANSAS																	
KANSAS CITY	002A01	0	0	0	0	0	0	0	0	0	131	128	133				**
MISSOURI																	
KANSAS	002A01	0	0	0	0	0	0	0	0	0	107	103	0				**
95 NORTHEAST KANSAS																	
KANSAS																	
TOPEKA	001A01	0	0	0	79	0	74	0	48	61	58	72	102	**	DOWN	UP	UP
99 SOUTH CENTRAL KANSAS																	
KANSAS																	
WICHITA	001A01	94	0	88	89	88	94	85	77	58	60	83	76	DOWN	**	DOWN	UP
102 BLUEGRASS (KY)																	
KENTUCKY																	
LEXINGTON	001A01	0	0	0	0	0	74	0	70	79	0	67	72			**	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
103 HUNTINGTON-ASHLAND-PORTSMOUTH-IRONTON (KY-OH-W.VA)																	
KENTUCKY																	
ASHLAND	002A01	0	0	0	0	0	0	0	0	122	153	132	143				**
105 SOUTH CENTRAL KENTUCKY																	
KENTUCKY																	
BOWLING GREEN	001A01	0	0	0	0	0	0	0	0	0	0	50	51				**
106 SOUTHERN LOUISIANA-SOUTHEAST TEXAS (LOUISIANA-TEXAS)																	
LOUISIANA																	
BATON ROUGE	001A01	113	0	124	0	80	86	0	0	0	70	65	68	DOWN	DOWN	DOWN	**
NEW ORLEANS	002A01	0	0	0	65	90	90	82	79	84	71	74	70	UP	UP	DOWN	**
110 METROPOLITAN PORTLAND (ME)																	
MAINE																	
PORTLAND	002A01	0	0	0	0	0	0	0	0	75	0	81	71				**
115 METROPOLITAN BALTIMORE (MD)																	
MARYLAND																	
BALTIMORE	001A01	127	132	127	125	145	124	133	117	98	110	113	0	DOWN	**	DOWN	**
119 METROPOLITAN BOSTON (MASS)																	
MASSACHUSETTS																	
WORCESTER	001A01	38	88	0	68	0	0	0	0	74	88	111	138	UP			UP
120 METROPOLITAN PROVIDENCE (MASS-R.I.)																	
MASSACHUSETTS																	
FALL RIVER	002A01	0	0	0	0	0	0	0	0	0	55	64	62				**
RHODE ISLAND																	
EAST PROVIDENCE	001A01	0	0	0	63	0	69	0	56	63	62	54	59	**	**	**	**
PROVIDENCE	001A01	109	74	93	115	101	117	113	96	86	76	88	84	DOWN	**	DOWN	**
121 MERRIMACK VALLEY-SOUTHERN NEW HAMPSHIRE (MASS-N.H.)																	
NEW HAMPSHIRE																	
CONCORD	001A01	0	0	0	0	39	32	35	43	33	32	38	38			**	**
122 CENTRAL MICHIGAN																	
MICHIGAN																	
FLINT	001A01	0	0	0	82	0	76	0	66	69	80	77	66	**	**	**	**
GRAND RAPIDS	001A01	0	0	94	149	0	110	0	76	90	80	75	75	DOWN	DOWN	**	**
SAGINAW	001A01	93	0	79	0	0	0	0	0	0	66	77	70	DOWN			**
123 METROPOLITAN DETROIT-PORT HURON (MICH)																	
MICHIGAN																	
DETROIT	001A01	140	110	106	116	170	152	143	124	134	116	113	92	**	UP	DOWN	DOWN
TRENTON	001A01	0	0	0	0	0	156	0	0	107	95	99	94			DOWN	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
124 METROPOLITAN TOLEDO (MICH-OHIO)																	
OHIO																	
TOLEDO	001A01	0	0	91	99	98	100	83	75	83	71	77	0	DOWN	**	DOWN	**
125 SOUTH CENTRAL MICHIGAN																	
MICHIGAN																	
LANSING	001A01	70	0	69	0	0	0	0	0	0	69	99	83	UP			**
128 SOUTHEAST MINNESOTA-LA CROSSE (MINN-WISC)																	
WISCONSIN																	
EAU CLAIRE	002A01	0	0	0	0	0	0	0	0	0	41	56	46				**
129 DULUTH-SUPERIOR (MINN-WISC)																	
MINNESOTA																	
DULUTH	001A01	0	68	0	53	62	0	67	0	64	65	67	55	**	**	**	**
WISCONSIN																	
SUPERIOR	001A01	0	0	0	0	67	0	0	0	75	63	76	0			**	**
130 METROPOLITAN FARGO-MOORHEAD (MINN-N.D.)																	
MINNESOTA																	
MOORHEAD	001A01	0	0	0	0	84	0	50	0	66	62	71	0			**	**
131 MINNEAPOLIS-ST. PAUL (MINN)																	
MINNESOTA																	
MINNEAPOLIS	001A01	93	70	81	70	78	67	80	79	72	70	74	62	**	**	**	**
ST PAUL	001A01	98	91	90	103	102	74	96	83	84	69	100	0	**	**	**	**
136 NORTHERN PIEDMONT (N.C.)																	
NORTH CAROLINA																	
GREENSBORO	001A01	0	57	0	64	0	0	0	0	0	98	94	0	UP			**
WINSTON-SALEM	002A01	0	0	0	0	0	0	0	0	0	95	119	115				**
145 LINCOLN-BEATRICE-FAIRBURY (NEB)																	
NEBRASKA																	
LINCOLN	002A01	0	0	0	0	0	0	0	0	0	0	63	56				**
151 NORTHEAST PENNSYLVANIA-UPPER DEL. VAL. (PENN-N.J.)																	
PENNSYLVANIA																	
ALLENTOWN	001A01	0	127	0	99	0	0	0	100	83	96	114	90	DOWN	**	**	**
HAZLETON	001A01	0	0	0	0	0	0	0	0	105	97	0	111				**
READING	001A01	108	0	122	0	0	114	107	97	126	91	111	0	**	**	**	**
SCRANTON	001A01	0	189	0	158	0	0	0	0	232	155	159	211	**			**
WILKES BARRE	001A01	105	0	94	0	0	0	0	0	116	90	91	101	**			**
152 ALBUQUERQUE-MID RIO GRANDE (N. MEX)																	
NEW MEXICO																	
ALBUQUERQUE	001A01	215	0	147	137	120	77	106	104	87	75	90	96	DOWN	DOWN	DOWN	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

		ANNUAL GEOMETRIC MEANS												TRENDS			
LOCATION :		A				B				C				A : C	A : B	B : C	C
		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
158 CENTRAL NEW YORK																	
NEW YORK																	
SYRACUSE	001A01	119	122	0	0	0	0	0	0	0	102	94	100	DOWN			**
UTICA	001A01	77	76	0	0	0	0	0	0	0	70	85	81	**			**
159 CHAMPLAIN VALLEY (N.Y.-VT)																	
VERMONT																	
BURLINGTON	001A01	82	58	51	0	64	50	69	0	40	42	59	0	DOWN	**	DOWN	UP
160 GENESEE-FINGER LAKES (N.Y.)																	
NEW YORK																	
ROCHESTER	001A01	143	107	84	87	0	0	0	0	0	109	116	82	**			DOWN
162 NIAGARA FRONTIER (N.Y.)																	
NEW YORK																	
BUFFALO	001A01	0	0	116	0	0	0	0	0	0	85	99	91	DOWN			**
NIAGARA FALLS	001A01	0	0	0	120	0	0	0	0	0	93	109	99	**			**
166 EASTERN PIEDMONT (N.C.)																	
NORTH CAROLINA																	
DURHAM	001A01	0	0	0	97	0	0	0	0	133	81	86	0	**			DOWN
167 METROPOLITAN CHARLOTTE (N.C.-S.C.)																	
NORTH CAROLINA																	
CHARLOTTE	001A01	117	129	0	101	94	103	112	108	109	96	68	0	DOWN	**	DOWN	DOWN
172 NORTH DAKOTA (REMAINDER)																	
NORTH DAKOTA																	
BISMARCK	001A01	85	74	74	74	83	0	0	0	70	70	79	73	**	**	**	**
173 DAYTON (OHIO)																	
OHIO																	
DAYTON	001A01	120	115	102	0	129	0	122	110	103	93	92	89	DOWN	**	DOWN	**
174 GREATER METROPOLITAN CLEVELAND (OHIO)																	
OHIO																	
AKRON	001A01	141	116	116	113	126	131	118	114	109	93	0	104	DOWN	**	DOWN	**
CANTON	001A01	0	166	0	140	0	0	0	0	0	93	101	88	DOWN			**
CLEVELAND	001A01	160	126	112	144	119	121	104	95	129	112	116	0	DOWN	DOWN	**	**
176 METROPOLITAN COLUMBUS (OHIO)																	
OHIO																	
COLUMBUS	001A01	116	94	58	105	116	109	114	82	91	97	90	71	DOWN	**	DOWN	DOWN
178 NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN)																	
OHIO																	
YOUNGSTOWN	001A01	132	123	140	150	124	133	135	117	112	112	117	108	DOWN	**	**	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
LOCATION :		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
178 NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN)																	
PENNSYLVANIA																	
ERIE	002A01	0	0	0	0	0	0	0	0	0	65	84	70				**
184 CENTRAL OKLAHOMA																	
OKLAHOMA																	
OKLAHOMA CITY	001A01	0	86	0	0	92	89	93	81	50	64	70	0	DOWN	**	DOWN	UP
186 NORTHEASTERN OKLAHOMA																	
OKLAHOMA																	
TULSA	001A01	0	0	58	61	63	65	63	48	45	57	55	52	**	**	**	**
193 PORTLAND (OREGON-WASHINGTON)																	
OREGON																	
PORTLAND	001A01	62	74	57	79	79	113	67	76	64	72	87	0	**	**	**	**
195 CENTRAL PENNSYLVANIA																	
PENNSYLVANIA																	
ALTOONA	001A01	0	0	0	0	0	116	0	102	83	86	208	102			**	UP
BETHLEHEM	002A01	0	0	0	0	0	0	0	0	87	83	98	73				**
JOHNSTOWN	001A01	0	148	0	155	0	165	0	0	154	110	132	0	**	**	DOWN	DOWN
196 SOUTH CENTRAL PENNSYLVANIA																	
PENNSYLVANIA																	
HARRISBURG	001A01	87	0	0	0	0	0	0	0	61	63	85	84	DOWN			UP
YORK	001A01	0	121	0	130	0	121	0	90	105	102	98	92	DOWN	**	**	**
197 SOUTHWEST PENNSYLVANIA																	
PENNSYLVANIA																	
PITTSBURGH	001A01	143	127	153	164	161	137	140	134	161	144	127	0	**	**	**	**
202 GREENVILLE-SPARTANBURG (S.C.)																	
SOUTH CAROLINA																	
GREENVILLE	001A01	110	0	70	0	0	0	86	0	92	76	81	63	**	**	**	DOWN
207 EASTERN TENNESSEE-SOUTHWESTERN VIRGINIA (TENN. - VA.																	
TENNESSEE																	
KNOXVILLE	002A01	0	0	0	0	0	0	0	0	0	108	95	83				**
208 MIDDLE TENNESSEE																	
TENNESSEE																	
NASHVILLE	001A01	119	107	143	124	108	107	103	99	101	89	90	0	DOWN	DOWN	**	**
215 METROPOLITAN DALLAS-FORT WORTH (TEX)																	
TEXAS																	
DALLAS	002A01	0	0	0	0	0	0	0	0	71	76	102	83				UP
FORT WORTH	001A01	72	0	84	0	0	0	0	0	0	81	78	73	**			**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
LOCATION :		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
216 METROPOLITAN HOUSTON-GALVESTON (TEX)																	
TEXAS																	
HOUSTON	001A01	103	89	[illegible]	54	56	119	92	105	74	85	87	95	**	**	DOWN	UP
PASADENA	002A01	0	0	[illegible]	0	0	0	0	0	0	77	74	83				**
217 METROPOLITAN SAN ANTONIO (TEX)																	
TEXAS																	
SAN ANTONIO	001A01	113	80	0	72	91	72	68	75	57	49	54	55	DOWN	DOWN	DOWN	**
220 WASATCH FRONT (UTAH)																	
UTAH																	
OGDEN	001A01	0	0	0	0	58	0	61	0	53	78	89	94			**	UP
SALT LAKE CITY	001A01	109	0	140	107	115	93	86	70	65	78	82	0	DOWN	DOWN	DOWN	**
222 CENTRAL VIRGINIA																	
VIRGINIA																	
DANVILLE	001A01	81	0	82	0	86	0	79	0	79	70	89	0	**	**	**	**
LYNCHBURG	001A01	0	0	0	0	0	115	0	99	113	95	114	100			**	**
223 HAMPTON ROADS (VA)																	
VIRGINIA																	
HAMPTON	001A01	74	50	0	54	0	70	0	65	60	44	58	53	**	UP	DOWN	**
NEWPORT NEWS	001A01	0	0	0	0	0	0	0	0	0	62	67	48				DOWN
NORFOLK	001A01	82	92	94	108	114	118	76	86	[illegible]	88	78	75	**	**	**	**
PORTSMOUTH	001A01	0	87	0	81	0	56	0	81	110	78	92	0	**	**	**	DOWN
225 STATE CAPITAL (VA)																	
VIRGINIA																	
RICHMOND	002A01	0	0	0	0	0	0	0	0	79	80	83	0				**
226 VALLEY OF VIRGINIA																	
VIRGINIA																	
ROANOKE	001A01	0	56	0	95	0	53	0	74	77	85	93	87	UP	**	**	**
229 PUGET SOUND (WASH)																	
WASHINGTON																	
SEATTLE	001A01	64	76	67	58	[illegible]	64	72	64	54	54	62	58	DOWN	**	DOWN	**
TACOMA	001A01	0	0	97	0	63	0	0	0	0	65	62	57	DOWN	DOWN	**	**
234 KANAWHA VALLEY (W. VA.)																	
WEST VIRGINIA																	
CHARLESTON	001A01	165	0	167	157	210	186	174	146	230	177	156	130	**	**	**	DOWN
SOUTH CHARLESTON	001A01	0	0	0	0	0	0	0	0	0	0	117	94				**
239 SOUTHEASTERN WISCONSIN																	
WISCONSIN																	
KENOSHA	001A01	0	0	0	90	[illegible]	69	0	76	[illegible]	67	67	80	DOWN	**	**	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NASN URBAN TOTAL SUSPENDED PARTICULATE MATTER

		ANNUAL GEOMETRIC MEANS												TRENDS			
		A				B				C				A : C	A : B	B : C	C
LOCATION :		60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
239 SOUTHEASTERN WISCONSIN	CONTINUED																
MILWAUKEE	001A01	137	0	0	111	133	132	129	125	139	110	91	84	**	**	DOWN	DOWN
RACINE	001A01	145	0	73	0	99	0	0	0	0	50	62	0	DOWN	**	DOWN	**
240 SOUTHERN WISCONSIN																	
WISCONSIN																	
MADISON	001A01	0	77	0	73	0	79	0	55	62	59	68	64	DOWN	**	**	**
241 CASPER (WYO)																	
WYOMING																	
CASPER	001A01	0	0	0	0	0	0	0	55	55	61	57	77			**	UP
242 METROPOLITAN CHEYENNE (WYO)																	
WYOMING																	
CHEYENNE	001A01	0	29	33	0	40	31	32	31	29	28	34	26	**	**	**	**
244 PUERTO RICO																	
PUERTO RICO																	
BAYAMON	002A01	0	0	0	0	0	0	0	0	0	85	104	0				**
CATANO	002A01	0	0	0	0	0	0	0	0	126	160	204	0				UP
GUAYANILLA	002A01	0	0	0	0	0	0	0	0	0	43	67	58				UP
PONCE	002A01	0	0	0	0	0	0	0	0	0	81	91	87				**
SAN JUAN	001A01	0	0	0	0	0	0	0	0	0	77	85	0				**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NON-URBAN TOTAL SUSPENDED PARTICULATE MATTER

	ANNUAL GEOMETRIC MEANS												TRENDS			
	A				B				C				A : C	A : B	B : C	C
LOCATION :	60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	68-71
7 TENN. RIVER VALLEY-CUMBERLAND MTS (ALA-TENN)																
TENNESSEE																
CUMBERLAND COUNT 001A03	0	0	0	0	0	0	0	0	0	28	39	0				**
14 FOUR CORNERS (ARIZ-COLO-N.M.-UTAH)																
ARIZONA																
GRAND CANYON NAT 001A03	0	15	14	16	19	19	27	17	21	15	21	0	UP	UP	**	**
COLORADO																
MESA VERDE NATIO 002A03	0	0	0	0	0	0	0	0	0	14	19	17				**
17 METROPOLITAN FORT SMITH (ARK-OKLA)																
OKLAHOMA																
CHEROKEE COUNTY 001A03	39	37	45	49	42	47	45	39	24	33	45	0	DOWN	**	DOWN	UP
21 NORTHWEST ARKANSAS																
ARKANSAS																
MONTGOMERY COUNT 001A03	36	32	25	35	0	0	38	31	21	24	26	33	DOWN	**	DOWN	UP
26 NORTH COAST (CALIF)																
CALIFORNIA																
HUMBOLDT COUNTY 001A03	0	41	0	33	35	37	35	41	48	38	38	0	**	**	**	**
52 WEST CENTRAL FLORIDA																
FLORIDA																
HARDEE COUNTY 001A03	0	0	0	0	0	0	0	0	0	24	32	38				UP
61 EASTERN IDAHO																
IDAHO																
BUTTE COUNTY 001A03	0	16	0	16	13	12	0	11	9	8	8	11	DOWN	DOWN	DOWN	LOW
83 SOUTHERN INDIANA																
INDIANA																
MONROE COUNTY 001A03	0	0	0	0	0	0	46	47	39	39	33	40			DOWN	**
84 WABASH VALLEY (IND)																
INDIANA																
PARKE COUNTY 001A03	56	53	52	50	57	48	40	40	33	44	64	59	**	DOWN	**	UP
107 ANDROSCOGGIN VALLEY (ME-N.H.)																
NEW HAMPSHIRE																
COOS COUNTY 001A03	16	16	0	0	20	18	23	21	15	15	20	19	**	UP	DOWN	UP
109 DOWN EAST (ME)																
MAINE																
ACADIA NATIONAL 001A03	22	25	25	0	24	0	22	25	22	18	25	23	**	**	**	**

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NON-URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :	ANNUAL GEOMETRIC MEANS												TRENDS			
					B				C				A : C	A : B	B : C	C
	60	61	62	63	64	65	66	67	68	69	70	71	60=71	60-67	64-71	68-71
120 METROPOLITAN PROVIDENCE (MASS-R.I.) RHODE ISLAND WASHINGTON COUNT 002A03	0	0	0	0	0	0	0	0	0	28	30	35				**
139 SOUTHWEST MISSOURI MISSOURI SHANNON COUNTY 002A03	0	0	0	0	0	0	0	0	0	27	26	27				**
141 GREAT FALLS (MONT) MONTANA GLACIER NATIONAL 001A03	10	11	10	0	0	16	12	12	8	11	0	13	**	UP	DOWN	UP
146 NEBRASKA (REMAINDER) NEBRASKA THOMAS COUNTY 001A03	24	18	15	20	23	17	23	19	19	16	20	0	**	**	**	**
147 NEVADA (REMAINDER) NEVADA WHITE PINE COUNT 001A03	11	11	15	11	12	10	6	5	8	12	14	0	**	DOWN	UP	UP
158 CENTRAL NEW YORK NEW YORK JEFFERSON COUNTY 001A03	0	26	25	27	37	33	26	25	21	29	29	22	**	**	**	**
168 NORTHERN COASTAL PLAIN (N.C.) NORTH CAROLINA CAPE HATTERAS NA 001A03	32	30	0	35	68	60	55	53	47	56	84	0	UP	UP	**	UP
178 NORTHWEST PENNSYLVANIA-YOUNGSTOWN (OHIO-PENN) PENNSYLVANIA CLARION COUNTY 001A03	45	39	0	28	41	48	37	47	35	29	42	33	**	**	DOWN	**
194 SOUTHWEST OREGON OREGON CURRY COUNTY 001A03	0	0	0	0	0	57	73	46	43	47	47	0			DOWN	**
205 BLACKHILLS-RAPID CITY (S. DAK) SOUTH DAKOTA BLACK HILLS NAT 001A03	0	0	17	19	26	13	14	23	8	12	0	14	DOWN	**	DOWN	UP
207 EASTERN TENNESSEE-SOUTHWESTERN VIRGINIA (TENN. - VA. VIRGINIA WYTHE COUNTY 001A03	0	0	0	0	0	0	0	0	0	32	32	25				**
216 METROPOLITAN HOUSTON-GALVESTON (TEX) TEXAS MATAGORDA COUNTY 001A03	0	0	0	0	0	35	30	32	25	27	30	37			**	UP

Table F-1 (continued). AIR QUALITY TRENDS AT NASN STATIONS BY POLLUTANT, 1964-1971

NON-URBAN TOTAL SUSPENDED PARTICULATE MATTER

LOCATION :	ANNUAL GEOMETRIC MEANS												TRENDS			
	A				B				C				A : C	A : B	B : C	C
	60	61	62	63	64	65	66	67	68	69	70	71	60-71	60-67	64-71	69-71
218 MIDLAND-ODESSA-SAN ANGELO (TEX) TEXAS TOM GREEN COUNTY 001A03	0	0	0	0	0	0	0	0	0	0	51	61				**
221 VERMONT (REMAINDER) VERMONT ORANGE COUNTY 001A03	42	35	39	31	28	36	41	41	28	27	28	29	DOWN	**	DOWN	**
226 VALLEY OF VIRGINIA VIRGINIA SHENANDOAH NATIO 001A03	32	30	32	31	26	32	30	27	27	31	31	29	**	**	**	**
229 PUGET SOUND (WASH) WASHINGTON KING COUNTY 002A03	0	0	0	0	0	0	0	0	0	0	32	28				**
243 WYOMING (REMAINDER) WYOMING YELLOWSTONE PARK 001A03	0	7	8	7	7	11	8	7	6	7	0	8	**	**	DOWN	LOW

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